



# DISASTER RISK REDUCTION AND MANAGEMENT- CLIMATE CHANGE ADAPTATION PLAN OF DAVAO DEL NORTE

## 2021 - 2023







Republika ng Pilipinas  
Lalawigan ng Davao del Norte  
**Sangguniang Panlalawigan**

Legislative Building, Mankilam, Tagum City, Davao del Norte



**EXCERPTS FROM THE MINUTES OF THE MAIDEN SESSION OF THE  
SANGGUNIANG PANLALAWIGAN OF DAVAO DEL NORTE (TERM 2019-2022)  
HELD AT THE SESSION HALL, PROVINCIAL GOVERNMENT CENTER  
(CAPITOL), TAGUM CITY, ON MONDAY, JANUARY 4, 2021**

**Present:**

Hon. Rey T. Uy	Vice Governor (Regular Presiding Officer)
Hon. Robert L. So	Senior Board Member
Hon. Nicandro T. Suaybaguio, Jr., UAP	Member
Hon. Jannet N. Tanong-Maboloc	Member
Hon. Franklin D. Gentiles, CE	Member
Hon. Francisco C. Remitar, MDMG	Member
Hon. Prospero E. Estabillo, Jr.	Member
Hon. Roy J. Catalan	Member
Hon. Janris Jay G. Relampagos	Member
Hon. Roger A. Laguna	Member
Hon. Dindo C. Parangan	Member/FABC
Hon. Silvino P. Matobato, Jr., PTRP	Member/PCL
Hon. Ariel S. Macia	Member/IPMR
Hon. Emerson Dave A. Silutan, LPT	Member/SKPFP

**On Official Business: None**

**Absent: None**

**CERTIFIED COPY:**

**LYN P. BEBERO, MPA**  
Local Legislative Staff Officer IV

**FEB 02 2021**

*Sponsors: Hon. Francisco C. Remitar, MDMG, Hon. Dindo C. Parangan, Hon. Roy J. Catalan, Hon. Janris Jay G. Relampagos, Hon. Robert L. So, Hon. Nicandro T. Suaybaguio, Jr., UAP and Hon. Roger A. Laguna*

**RESOLUTION NO. 006**

**APPROVING THE UPDATED DISASTER RISK REDUCTION  
AND MANAGEMENT-CLIMATE CHANGE ADAPTATION  
PLAN CY 2021-2023 OF THE PROVINCE OF DAVAO  
DEL NORTE**

**WHEREAS**, a letter dated December 4, 2020 of Engr. Josie Jean R. Rabanoz, CE, MPA, EnP, Provincial Administrator, this Province, duly received by the Office of the Secretary to the Sangguniang Panlalawigan on December 9, 2020, endorsed to this August Body, Provincial Development Council (PDC) Resolution No. 13, Series of 2020 of the Province of Davao del Norte, was presented for appropriate action;

**WHEREAS**, said measure was referred to the Committee on Human Settlements, Planning and Development and the Committee on Peace and Order/Public Safety, for review and recommendation;

**WHEREAS**, the Committees thoroughly discussed and deliberated on the merits of the said measure and per Joint Committee Report No. 11 dated December 16, 2020, finally recommended to approve the same for being in order and within the bounds of law;

**WHEREFORE, BE IT RESOLVED,** by the Sangguniang Panlalawigan in Session Assembled, to approve, as it is hereby approved the Updated Disaster Risk Reduction and Management-Climate Change Adaptation Plan CY 2021-2023 of the Province of Davao del Norte;

**RESOLVED, FURTHER,** that copy of this resolution be furnished Engr. Josie Jean R. Rabanoz, CE, MPA, EnP, Provincial Administrator, Provincial Administrator's Office and Mr. Nelson F. Plata, MPA, EnP, PDC Secretary/Provincial Planning and Development Coordinator, Provincial Planning and Development Office, both of this Province, for their information and record.


**CARRIED.**

I hereby certify to the correctness of this resolution.



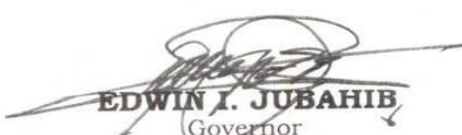
**DENNIS DEAN T. CASTILLO, MPA**  
(PG Department Head)  
Secretary to the Sanggunian

**ATTESTED:**



**REY T. UY**  
(Vice Governor)  
Regular Presiding Officer

**APPROVED:**



**EDWIN I. JUBAHIB**  
Governor

JAN 26 2021  
Date Signed

**CERTIFIED COPY:**



**LYN P. BENERO, MPA**  
Local Legislative Staff Officer IV  
FEB 02 2021



PROVINCIAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCIL

PDRRMC RESOLUTION APPROVING THE UPDATED LDRRM PLAN

RESOLUTION NO. 11

Series of 2020

**A RESOLUTION APPROVING THE UPDATED DISASTER RISK REDUCTION AND MANAGEMENT - CLIMATE CHANGE ADAPTATION PLAN OF DAVAO DEL NORTE CY 2021-2023 AND ENDORSING TO THE PROVINCIAL DEVELOPMENT COUNCIL AND THE HONORABLE SANGUNIANG PANLALAWIGAN FOR CONSIDERATION AND APPROPRIATE ACTION**

**WHEREAS**, Section 12, (4) of Republic Act 10121 states that the PDRRMC shall formulate and implement a comprehensive and integrated LDRRMP in accordance with the national, regional and provincial framework, and policies on disaster risk reduction in close coordination with the Local Development Councils (LDCs);

**WHEREAS**, NDRRMC Memorandum Circular No. 147, s. 2017 prescribe the guidelines in the conduct and evaluation of the Local Disaster Risk Reduction and Management Plans (LDRRMPs) pursuant to Section 9 (e) of RA 10121 and paragraph 2.2.11 of the Local Budget Memorandum No. 75, s. 2017;

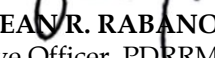
**WHEREAS**, in view of the abovementioned policies, the Four Thematic Committees' Focal Persons reviewed the PDRRM Plan on October 23, 2020 basing their review on the Provisional Review Form and Checklist for the Monitoring and Evaluation of LDRRM Plan through a video conference in adherence to the President's declaration during the 5<sup>th</sup> SONA to disallow face-to-face activities until the COVID-19 vaccine is made available and in adherence to the Office of the Civil Defense guidelines in the conduct of Local DRRM Plan Review during this time of pandemic;

**WHEREAS**, the PDRRM Plan after duly reviewed was presented to the members of the PDRRMC Special Action Committee for its urgent approval through a video conferencing for the same reason as mentioned;

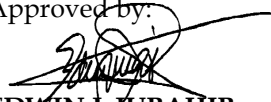
**NOW THEREFORE, BE IT RESOLVED**, as it is hereby resolved on the motion of Mr. Nelson Plata and was unanimously seconded by the members of the PDRRMC Special Action Committee that the Provincial Disaster Risk reduction and Management - Climate Change Adaptation Plan of Davao del Norte 2021-2023 be approved and be endorsed to the Provincial Development Council and to the Sangguniang Panlalawigan for their consideration and appropriate action.

**CARRIED UNANIMOUSLY.**

**I HEREBY CERTIFY** to the correctness of the above-quoted resolution.

  
**JOSIE JEAN R. RABANOZ, CE, MPA, EnP**  
Executive Officer, PDRRMC  
Provincial Administrator

Approved by:

  
**EDWIN L. JUBAHIB**  
Chairman, PDRRMC  
Governor







## PROVINCIAL GOVERNOR'S OFFICE

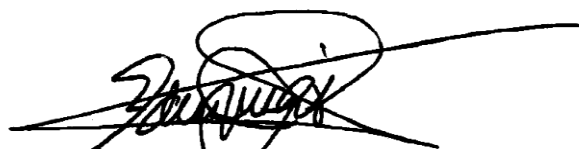
### *Message*

In this time of pandemic, we cannot afford to lose the battle against the virus. It is vital to be on guard to defend one another from the adverse effects the virus and other disasters may bring. For us to be resilient we must strengthen our fortifications to carry us through this trying times.

The updated Disaster Risk Reduction and Management – Climate Change Adaptation Plan of Davao del Norte CY 2021-2023 offers strategies of collaboration among local and national government agencies to brighten our path towards the victory that we aspire in new normal.

Risk reduction and management is everybody's concern. Disasters know no social class, nor sectoral and political boundaries. It is our collective responsibility to keep our families and communities safer and capable of building back better. I, therefore, ask our local government units, development partners, our communities and all the sectors of our Davaonon society to make full use of this plan. This is important in sustaining our development momentum and in reviving up our efforts in building an ever secure, resilient and sustainable future.

One DavNor, One Team!



**EDWIN L. JUBAHIB**  
Governor



## EXISTING DRRM – CCA POLICIES/GUIDELINES/RESOLUTION

### RA 10121

**Section 12. Local Disaster Risk Reduction and Management Office (LDRRMO).** - (a) There shall be established an LDRRMO in every province, city and municipality, and a Barangay Disaster Risk Reduction and Management Committee (BDRRMC) in every barangay which shall be responsible for setting the direction, development, implementation and coordination of disaster risk management programs within their territorial jurisdiction

(7) Prepare and submit to the local sanggunian through the LDRRMC and the LDC the annual LDRRMO Plan and budget, the proposed programming of the LDRRMF, other dedicated disaster risk reduction and management resources, and other regular funding source/s and budgetary support of the LDRRMO/BDRRMC;

### RA 9729

**Section 14. Local Climate Change Action Plan.** – The LGUs shall be the frontline agencies in the formulation, planning and implementation of climate change action plans in their respective areas, consistent with the provisions of the Local Government Code, the Framework, and the National Climate Change Action Plan.

Barangays shall be directly involved with municipal and city governments in prioritizing climate change issues and in identifying and implementing best practices and other solutions. Municipal and city governments shall consider climate change adaptation, as one of their regular functions. Provincial governments shall provide technical assistance, enforcement and information management in support of municipal and city climate change action plans. Inter-local government unit collaboration shall be maximized in the conduct of climate-related activities.

LGUs shall regularly update their respective action plans to reflect changing social, economic, and environmental conditions and emerging issues. The LGUs shall furnish the Commission with copies of their action plans and all subsequent amendments, modifications and revisions thereof, within one (1) month from their adoption. The LGUs shall mobilize and allocate necessary personnel, resources and logistics to effectively implement their respective action plans.

The local chief executive shall appoint the person responsible for the formulation and implementation of the local action plan.

It shall be the responsibility of the national government to extend technical and financial assistance to LGUs for the accomplishment of their Local Climate Change Action Plans.

The LGU is hereby expressly authorized to appropriate and use the amount from its Internal Revenue Allotment necessary to implement said local plan effectively, any provision in the Local Government Code to the contrary notwithstanding.

### RA 7160

**ARTICLE 3. Declaration of Policy.** — (a) It is hereby declared the policy of the State that the territorial and political subdivisions of the State shall enjoy genuine and meaningful local autonomy to enable them to attain their fullest development as self-reliant communities and make them more effective partners in the attainment of national goals. Toward this end, the State shall provide for a more responsive and accountable local government structure instituted through a system of decentralization whereby local government units (LGUs) shall be given more powers, authority, responsibilities, and resources. The process of decentralization shall proceed from the National Government to the LGUs.

(b) It is also the policy of the State to ensure the accountability of LGUs through the institution of effective mechanisms of recall, initiative and referendum.

(c) It is likewise the policy of the State to require all national government agencies and offices (NGOs) to conduct periodic consultations with appropriate LGUs, nongovernmental organizations (NGOs) and people's organizations, and other concerned sectors of the community before any project or program is implemented in their respective jurisdictions.

(d) Every LGU shall exercise the powers expressly granted, those necessarily implied therefrom, as well as powers necessary, appropriate, or incidental for its efficient and effective governance, and those which are essential to the promotion of the general welfare. Within their respective territorial jurisdictions, LGUs shall ensure and support, among other things, the preservation and enrichment of culture, promote health and safety, enhance the right of the people to a balanced ecology, encourage and support the development of appropriate and self-reliant scientific and technological capabilities, improve public morals, enhance economic prosperity and social justice, promote full employment among their residents, maintain peace and order, and preserve the comfort and convenience of their inhabitants.



Provincial Ordinance No. 2014-004

Section 3. Training Center: For the purpose of carrying out the policy, there is hereby created a training center in the province to be known as the PDRRM Training Center in the Province to be known as the PDRRM Training Center which shall be established within the PDRRM premises.

Provincial Ordinance No. 2016-009

Institutionalizing the Alliance of Grassroots Responders (AGR) for Disasters and Emergencies in all Barangays of the Province of Davao del Norte, Appropriating Funds Therefore, and for Other Purposes

Section 5. Composition. The Province-wide Alliance of Grassroots Responders for Disaster and Emergencies shall be composed of at least (10) physically-abled residents of each barangay who shall be duly appointed by the Provincial Governor as Responders. The composition shall be representative of all sectors in the community.

Provincial Executive Order No. 52, s. 2016

An Order Amending the Composition of the Peoples Survival Fund Project Implementation Unit (PSF-PIU) of the Province of Davao del Norte

Provincial Executive Order No. 62, s. 2017

An Order Creating the Local Climate Change Action Plan (LCCAP) Core Team of Davao del Norte and incorporating therein its Technical Working Group (TWG)

Provincial Executive Order No. 49, s. 2017

An Executive Order Establishing the Damage Assessment and Needs Analysis (DANA) Teams of the Provincial Disaster Risk Reduction and Management Council (PDRRMC) of Davao del Norte

Provincial Executive Order No. 25,, s. 2017

An Order Creating the Provincial Mental Health and Psychosocial Support (MHPSS) Team in Davao del Norte

Provincial Executive Order No. 24, s. 2017

An Executive Order Establishing the Provincial Incident Management Team, Composition and Functions of the Provincial Disaster Risk Reduction and Management Council Davao del Norte

Provincial Executive Order No. 35, s. 2018

An Order Reconstituting the Composition of the Provincial Disaster Risk Reduction and Management Council, its Technical Working Group and Special Action Committee

Provincial Executive Order No. 36, s. 2018

An Executive Order Creating the Policies and Guidelines on Pre-emptive and Forced Evacuation and Mandating its use during Emergency Situations Caused by Natural or Man-Made Disasters

Provincial Executive Order No. 08, s. 2020

An Order Declaring the Entire Province of Davao del Norte, Excluding the Island Garden City of Samal Under Community Quarantine, Providing for its Policies, Regulations and Sanctions Thereof

Provincial Executive Order No. 16, s. 2020

An Order Adopting and Imposing the Davao Region COVID 19 Task Force Orders on the Movement of Persons and Vehicles, Imposition of Curfew Hours, And Imposition of Liquor Ban and Manufacture, Transport, and Trading of Methanol- Based Products in the Entire Province of Davao del Norte to Prevent the Spread of Coronavirus Disease (COVID-19)

Provincial Executive Order No. 26, s. 2020

An Order Prescribing Additional Guidelines for the Effective Implementation of the Community Quarantine in the Entire Province of Davao del Norte Pursuant to the Issuance of the Davao Region COVID-19 Task Force Order No. 2020-007, Dated 26 March 2020

Provincial Executive Order No. 29, s. 2020

An Order Prescribing Guidelines on the Implementation of Quarantine Pass and Reiterating the Imposition of Curfew and Liquor Ban and Prohibition of the Manufacture, Transport, and Trading of Methanol-Based Products During the Implementation of the Community Quarantine in Davao del Norte Province

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## ACRONYMS AND ABBREVIATIONS

AFMA	Agriculture and Fishery Modernization Act
ARG	Automatic Rain Gauge
AWS	Automatic Weather Station
CBRMC	Community Based Road Maintenance Contracting
CCA	Climate Change Adaptation
CCCM	Camp Coordination and Camp Management
CISD	Critical Incident Stress Debriefing
DepEd	Department of Education
DILG	Department of the Interior and Local Government
DOH	Department of Health
DOST	Department of Science and Technology
DRR	Disaster Risk Reduction
DSWD	Department of Social Welfare and Development
DTI	Department of Trade and Industry
GAD	Gender and Development
GIS	Geographic Information System
HEMS	Health Emergency Management System
ICS	Incident Command System
LCE	Local Chief Executive
LDRRMO	Local Disaster Risk Reduction and Management Office
LGU	Local Government Unit
MGB	Mines and Geosciences Bureau
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NBI	National Bureau of Investigation
NIPAS	National Integrated Protected Area System
NPAAD	Network of Protected Areas for Agricultural Development
OPLAN ANDAM	Operation Plan Advocacy on Natural Disaster Awareness and Management
PADRRMO	Provincial Alliance of Disaster Risk Reduction and Management Officers
PAGASA	Philippine Atmospheric Geophysical and Astronomical Services
PAGRO	Provincial Agriculture's Office
PDANA	Post Damage Assessment and Needs Analysis
PDRR	Pre-Disaster Risk Assessment
PDRRM	Provincial Disaster Risk Reduction Management
PDRRMC	Provincial Disaster Risk Reduction and Management Council
PDRRMD	Provincial Disaster Risk Reduction and Management Division
PDPFP	Provincial Development Physical Framework Plan
PENRO	Provincial Environment and Natural Resources Office
PEO	Provincial Engineers Office
PGSO	Provincial General Services Office
PGO	Provincial Governors Office
PHILVOLCS	Philippine Institute of Volcanology and Seismology
PPDO	Provincial Planning and Development Office
PSWDO	Provincial Social Welfare and Development Office
PVO	Provincial Veterinary Office
RDANA	Rapid Damage Assessment and Needs Analysis
SAFDZ	Strategic Agricultural and Fisheries Development Zone
SEC	Securities and Exchange Commission
TEA	Tools Equipment Accessories
TWG	Technical Working Group
WASH	Water Sanitation and Hygiene
WLMS	Water Level Monitoring System
COVID 19	Corona Virus Disease 2019
ASF	African swine fever
EREID	Emerging Re-emerging Infectious Disease

## DEFINITION OF TERMS

(a) "*Adaptation*" - the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

(b) "*Capacity*" - a combination of all strengths and resources available within a community, society or organization that can reduce the level of risk, or effects of a disaster. Capacity may include infrastructure and physical means, institutions, societal coping abilities, as well as human knowledge, skills and collective attributes such as social relationships, leadership and management. Capacity may also be described as capability.

(c) "*Civil Society Organizations*" Or "*CSOs*" - non-state actors whose aims are neither to generate profits nor to seek governing power. CSOs unite people to advance shared goals and interests. They have a presence in public life, expressing the interests and values of their members or others, and are based on ethical, cultural, scientific, religious or philanthropic considerations. CSOs include nongovernment organizations (NGOs), professional associations, foundations, independent research institutes, community-based organizations (CBOs), faith-based organizations, people's organizations, social movements, and labor unions.

(d) "*Climate Change*" - a change in climate that can't be identified by changes in the mean and/or variability of its properties and that persists for an extended period typically decades or longer, whether due to natural variability or as a result of human activity.

(e) "*Community-Based Disaster Risk Reduction and Management*" or "*CBDRRM*" - a process of disaster risk reduction and management in which at risk communities are actively engaged in the identification, analysis, treatment, monitoring and evaluation of disaster risks in order to reduce their vulnerabilities and enhance their capacities, and where the people are at the heart of decision-making and implementation of disaster risk reduction and management activities.

(f) "*Complex Emergency*" - a form of human-induced emergency in which the cause of the emergency as well as the assistance to the afflicted IS complicated by intense level of political considerations.

(g) "*Contingency Planning*" - a management process that analyzes specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations.

(h) "Disaster" - a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources. Disasters are often described as a result of the combination of: the exposure to a hazard; the conditions of vulnerability that are present; and insufficient capacity or measures to reduce or cope with the potential negative consequences, Disaster impacts may include loss of life, injury, disease and other negative effects on human, physical, mental and social well-being, together with damage to property, destruction of assets, loss of services, Social and economic disruption and environmental degradation. *1avvphi1*



(i) "*Disaster Mitigation*" - the lessening or limitation of the adverse impacts of hazards and related disasters. Mitigation measures encompass engineering techniques and hazard-resistant construction as well as improved environmental policies and public awareness.

(j) "*Disaster Preparedness*" - the knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the Impacts of likely, imminent or current hazard events or conditions. Preparedness action is carried out within the context of disaster risk reduction and management and aims to build the capacities needed to efficiently manage all types of emergencies and achieve orderly transitions from response to sustained recovery. Preparedness is based on a sound analysis of disaster risk and good linkages with early warning systems, and includes such activities as contingency planning, stockpiling of equipment and supplies, the development of arrangements for coordination, evacuation and public information, and associated training and field exercises. These must be supported by formal institutional, legal and budgetary capacities.

(k) "*Disaster Prevention*" - the outright avoidance of adverse impacts of hazards and related disasters. It expresses the concept and intention to completely avoid potential adverse impacts through action taken in advance such as construction of dams or embankments that eliminate flood risks, land-use regulations that do not permit any settlement in high-risk zones, and seismic engineering designs that ensure the survival and function of a critical building in any likely earthquake.

(l) "*Disaster Response*" - the provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected. Disaster response is predominantly focused on immediate and short-term needs and is sometimes called "disaster relief".

(m) "*Disaster Risk*" - the potential disaster losses in lives, health status, livelihood, assets and services, which could occur to a particular community or a Society over some specified future time period.

(n) "*Disaster Risk Reduction*" - the concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposures to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.

(o) "*Disaster Risk Reduction and Management*" - the systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster. Prospective disaster risk reduction and management refers to risk reduction and management activities that address and seek to avoid the development of new or increased disaster risks, especially if risk reduction policies are not put in place.

(p) "*Disaster Risk Reduction and Management Information System*" - a specialized database which contains, among others, information on disasters and their human material, economic and environmental impact, risk assessment and mapping and vulnerable groups.

(q) "*Early Warning System*" - the set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss. A people-centered early warning system

necessarily comprises four (4) key elements: knowledge of the risks; monitoring, analysis and forecasting of the hazards; communication or dissemination of alerts and warnings; and local capabilities to respond to the warnings received. The expression "end-to-end warning system" is also used to emphasize that warning systems need to span all steps from hazard detection to community response.

(r) "*Emergency*" - unforeseen or sudden occurrence, especially danger, demanding immediate action.

(s) "*Emergency Management*" - the organization and management of resources and responsibilities for addressing all aspects of emergencies, in particular preparedness, response and initial recovery steps.

(t) "*Exposure*" - the degree to which the elements at risk are likely to experience hazard events of different magnitudes.

(u) "*Geographic Information System*" - a database which contains, among others, geo-hazard assessments, information on climate change, and climate risk reduction and management.

(v) "*Hazard*" - a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihood and services, social and economic disruption, or environmental damage.

(w) "*Land-Use Planning*" - the process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long-term economic, social and environmental objectives and the implications for different communities and interest groups, and the subsequent formulation and promulgation of plans that describe the permitted or acceptable uses.

(x) "*Mitigation*" - structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation, and technological hazards and to ensure the ability of at-risk communities to address vulnerabilities aimed at minimizing the impact of disasters. Such measures include, but are not limited to, hazard-resistant construction and engineering works, the formulation and implementation of plans, programs, projects and activities, awareness raising, knowledge management, policies on land-use and resource management, as well as the enforcement of comprehensive land-use planning, building and safety standards, and legislation.

(y) "*National Disaster Risk Reduction and Management Framework*" or "*NDRRMF*" - provides for comprehensive, all hazards, multi-sectoral, inter-agency and community-based approach to disaster risk reduction and management.

(z) "*National Disaster Risk Reduction and Management Plan*" or "*NDRRMP*" - the document to be formulated and implemented by the Office of Civil Defense (OCD) that sets out goals and specific objectives for reducing disaster risks together with related actions to accomplish these objectives.

The NDRRMP shall provide for the identification of hazards, vulnerabilities and risks to be managed at the national level; disaster risk reduction and management approaches and strategies to be applied in managing said hazards and risks; agency roles, responsibilities and lines of authority at all government levels; and vertical and horizontal coordination of disaster risk reduction and management in the pre-disaster and post-disaster phases. It shall be in conformity with the NDRRMF.

(aa) "*Post-Disaster Recovery*" - the restoration and improvement where appropriate, of facilities, livelihood and living conditions. of disaster-affected communities, including efforts to reduce disaster risk factors, in accordance with the principles of "build back better".

(bb) "*Preparedness*" - pre-disaster actions and measures being undertaken within the context of disaster risk reduction and management and are based on sound risk analysis as well as pre-disaster activities to avert or minimize loss of life and property such as, but not limited to, community organizing, training, planning, equipping, stockpiling, hazard mapping, insuring of assets, and public information and education initiatives. This also includes the development/enhancement of an overall preparedness strategy, policy, institutional structure, warning and forecasting capabilities, and plans that define measures geared to help at-risk communities safeguard their lives and assets by being alert to hazards and taking appropriate action in the face of an Imminent threat or an actual disaster.

(cc) "*Private Sector*" - the key actor in the realm of the economy where the central social concern and process are the mutually beneficial production and distribution of goods and services to meet the physical needs of human beings. The private sector comprises private corporations, households and nonprofit institutions serving households.

(dd) "*Public Sector Employees*" - all persons in the civil service.

(ee) "*Rehabilitation*" - measures that ensure the ability of affected communities/areas to restore their normal level of functioning by rebuilding livelihood and damaged infrastructures and increasing the communities' organizational capacity.

(ff) "*Resilience*" - the ability of a system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

(gg) "*Response*" - any concerted effort by two (2) or more agencies, public or private, to provide assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected and in the restoration of essential public activities and facilities.

(hh) "*Risk*" - the combination of the probability of an event and its negative consequences.

(ii) "*Risk Assessment*" - a methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihood and the environment on which they depend. Risk assessments with associated risk mapping include: a review of the technical characteristics of hazards such as their location, intensity, frequency and probability; the analysis of exposure and vulnerability including the physical, social, health, economic and environmental dimensions; and the evaluation of the effectiveness of prevailing and alternative coping capacities in respect to likely risk scenarios.

(jj) "*Risk Management*" - the systematic approach and practice of managing uncertainty to minimize potential harm and loss. It comprises risk assessment and analysis, and the implementation of strategies and specific actions to control, reduce and transfer risks. It is widely practiced by organizations to minimize risk in investment decisions and to address operational risks such as those of business disruption, production failure, environmental damage, social impacts and damage from fire and natural hazards.

(kk) "*Risk Transfer*" - the process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household, community, enterprise or state authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.

(ll) "*State of Calamity*" - a condition involving mass casualty and/or major damages to property, disruption of means of livelihoods, roads and normal way of life of people in the affected areas as a result of the occurrence of natural or human-induced hazard.

(mm) "*Sustainable Development*" - development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two (2) key concepts: (1) the concept of "needs", in particular, the essential needs of the world's poor, to which overriding priority should be given; and (2) the idea of limitations imposed by the state of technology and social organizations on the environment's ability to meet present and future needs. It is the harmonious integration of a sound and viable economy, responsible governance, social cohesion and harmony, and ecological integrity to ensure that human development now and through future generations is a life-enhancing process.

(nn) "*Vulnerability*" - the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard. Vulnerability may arise from various physical, social, economic, and environmental factors such as poor design and construction of buildings, inadequate protection of assets, lack of public information and awareness, limited official recognition of risks and preparedness measures, and disregard for wise environmental management.

(oo) "*Vulnerable and Marginalized Groups*" - those that face higher exposure to disaster risk and poverty including, but not limited to, women, children, elderly, differently-abled people, and ethnic minorities.



## EXECUTIVE SUMMARY

The historical occurrence of natural and human induced hazards and the possibilities of its reoccurrence exposed several population and resources to become vulnerable to risks. To foster resiliency in all sectors, the Provincial Government of Davao del Norte updated the Disaster Risk Reduction and Management Plan for 2021 - 2023.

Guided by the Sendai Framework for Disaster Risk Reduction the plan upholds the four (4) priorities of action, namely: Understanding disaster risk; strengthening disaster risk governance to manage disaster risk; Investing in disaster risk reduction for resilience; and Enhancing disaster preparedness for effective response, and to Build Back Better in recovery, rehabilitation and reconstruction.

Consistent with the Republic Act 10121 of 2010 the Plan also focuses on four thematic areas namely 1) Disaster Prevention and Mitigation, 2) Disaster Preparedness, 3) Disaster Response and 4) Disaster Rehabilitation and Recovery.

Conforming to the updated DRRM Plan of the Regional Disaster Risk Reduction and Management Council XI, approved on the 1<sup>st</sup> day of April 2016, the Provincial DRRM Plan also updated and aimed to achieve fourteen (14) outcomes.

In Ecological Profile the Provincial Situation is presented to provide a clear picture on the demographical, geographical, weather, environmental, and economic information. Leading towards the plan, assessment of the hazard, vulnerability and capacity was done to determine the risks. Risk Profile came from the conducted Risk Assessment, which is a method to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihood and the environment on which they depend. The Local Disaster Risk Reduction and Management Councils and Officers of the component cities and municipalities 'assessment, identified flooding as the most frequent and high-risk hazard experienced by Davao del Norte and it is followed next by landslides. The most vulnerable were all households, crops, livestock and infrastructure in the low-lying areas. The local capacities include existing LDRRMC structure, systems, programs, and protocols for disaster operations. The challenges faced by the four thematic areas since the formulation of the plan in 2019 were also looked into, to improve the strategies employed in the past.

The PDRRM Plan envisions a safer, adaptive and disaster resilient communities in an improved environment quality. The plan sets down 4 impacts and 14 outcomes.

### Disaster Mitigation and Prevention

To minimize potential disaster impacts & decreased hazard risks the efforts are focused on decreasing vulnerability and exposure of the population to all hazards and enhanced capacities of the institution to reduce the risks from all hazards.

### Disaster Preparedness

Efforts are geared towards strengthened capacities of communities in anticipating, coping, & recovering from the negative impacts of emergency occurrences & disasters thus resulting to increase the level of awareness, skills, & attitudes of the communities to manage with the effects of disaster, enhanced the DRRM & CCA capacity of municipal, city, and barangay council members, offices and operating centers at all levels with best practices appreciated, as well as strengthened partnership and coordination among DRRM key players and stakeholders.

## Disaster Response

To attain preservation of life and properties, ensure basic subsistence needs are met, and restoration of basic social services in affected areas, measures and coordination including basic services, as well as CCCM and relief operations are enhanced; search, rescue, and retrieval operations are made efficient; and monitoring on the prevention and control of overpricing/ profiteering and hoarding of prime commodities, medicines, and petroleum products is strengthened.

## Disaster Rehabilitation and Recovery

Communities and environment hit by disaster are able to fully recover with the building back-better approach, specifically through enhanced system of doing post damage assessment & needs analysis, planning, monitoring and evaluation, upgraded DRR-CCA resilient Infrastructure, agricultural and social facilities & utilities; strengthened/Improved DRR-CCA of human sensitivity on settlements, environment, livelihood opportunities; and strengthened the PLGU team that conducted psychological assessment to the Dabaonon after the disaster to restore them to normal condition physically/ spiritual & morally.

## **Timeline and Implementation of the PDRRMP**

The plan shall be implemented in CY 2021 up to 2023.

## **Monitoring and evaluation**

In the last part of the plan the monitoring and evaluation strategy were laid to keep track of the progress of the implementation of the PDRRM Plan. To monitor and evaluate, the indicators will be used against targets and activities identified in each of the four (4) thematic areas of the PDRRM Plan.

## A. ECOLOGICAL PROFILE

### Geographical, Administrative Profile

Davao del Norte is strategically located at the southeastern part of Region XI, approximately within 125° 38' east longitude and 7°7' to 8°0' north latitude. It is bounded by the Province of Agusan del Sur on the North, Bukidnon on the Northwest, Davao City on the West, Davao Gulf on the South and the Province of Compostela Valley on the East.

Figure 1. Location Map



Davao del Norte has a land area of 3,462.80 km<sup>2</sup>. It has eight (8) municipalities and three (3) component cities with 223 barangays, sub-divided into two congressional districts. District I comprises the municipalities of Asuncion, Kapalong, New Corella, San Isidro, Talaingod and the City of Tagum, while District II covers the municipalities of B.E. Dujali, Carmen, Sto. Tomas, the City of Panabo and the Island Garden City of Samal.

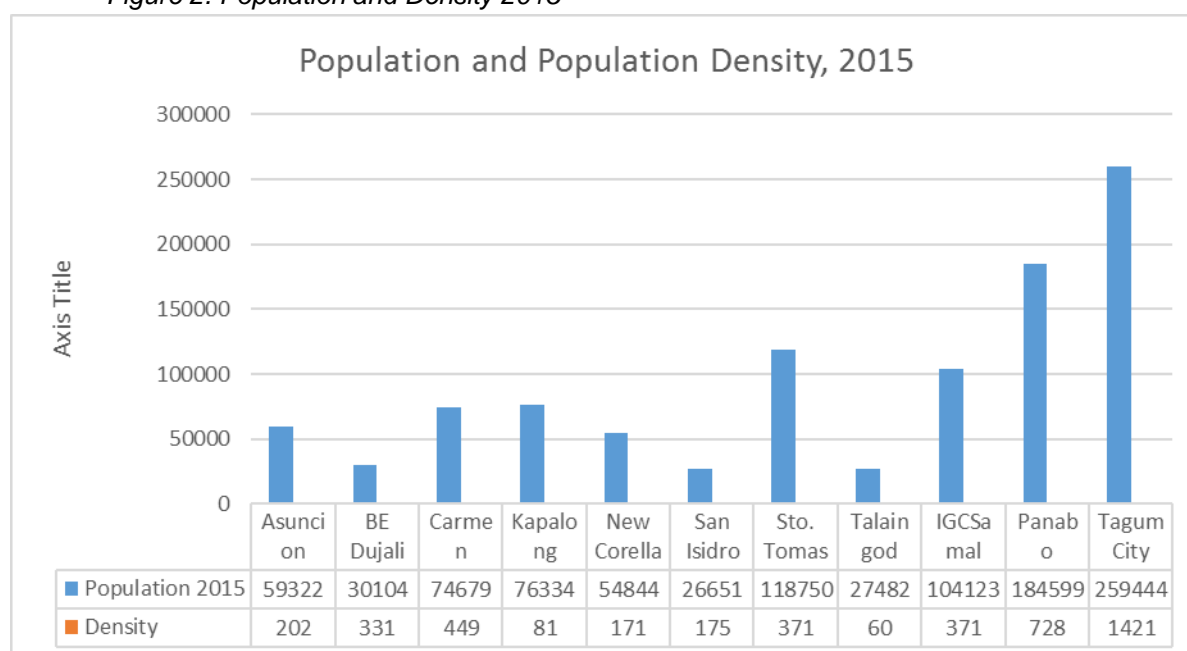
Table 1. Land area and Number of Barangays, Davao del Norte

City/Municipality	Land Area (km2)	No. Of Barangays
Asuncion	293.47	20
B.E Dujali	91.00	5
Carmen	166.25	20
Kapalong	945.86	14
New Corella	321.28	21
San Isidro	152.49	13
Sto. Tomas	320.41	19
Talaingod	454.76	3
Island Garden City of Samal	280.71	46
Panabo City	253.63	39
Tagum City	182.54	23
<b>Davao del Norte</b>	<b>3,462.80</b>	<b>223</b>

Source: PPDO, Davao del Norte

## Population and Density

Figure 2. Population and Density 2015



Source: PPDO, Davao del Norte

Davao del Norte has a total population of 1,016,332 based on the 2015 Census. Of these, Tagum City has the most number of people at 259,444, followed by Panabo City with 184,599. On the other hand, the municipality of San Isidro has the least population with 26,651. In terms of density, Tagum City and Panabo City are densely populated while Kapalong has the lowest density. This is because of its large area that is classified as forestland and therefore not suitable for settlement.



## Age and Sex Structure

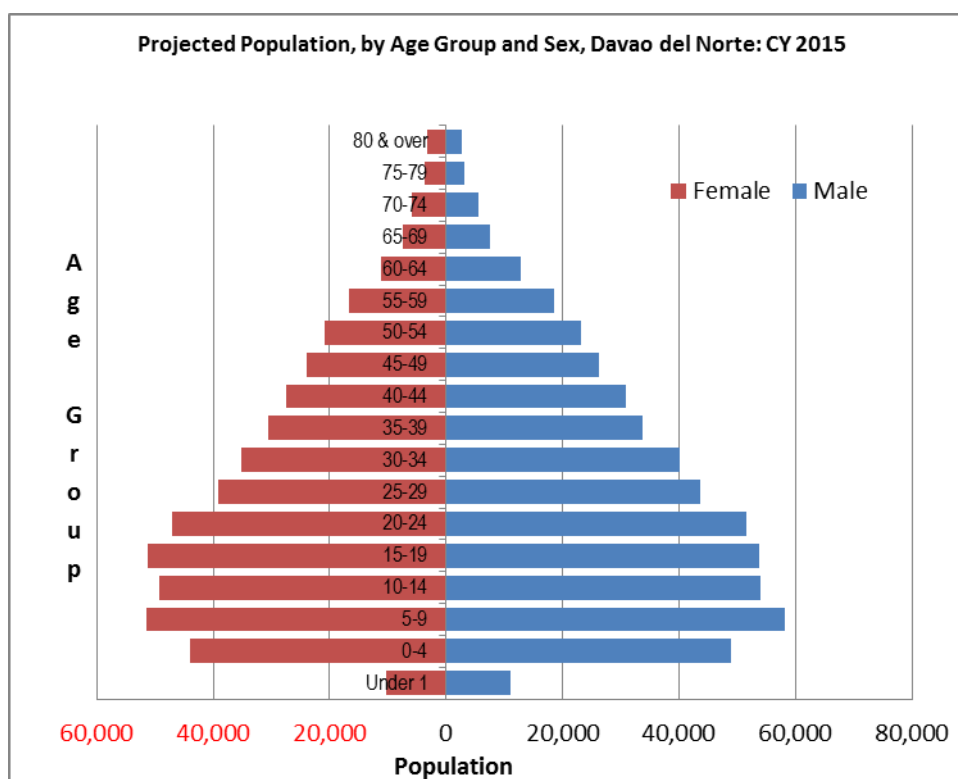
Looking at the age structure of Davao del Norte, it can be seen that it has a very young population having 61.49% of the total household population younger than age 30. The males comprises 51.3% outnumbered the females (48.7%), hence a sex ratio of 105 males for every 100 females. It can be noted that between the ages 0 – 49 years old, there are more males than females but at the top of the pyramid, there are more females than males. The predominance of females over males at older ages suggests an increased overall survival of women due to better health care. It can also be concluded that the health-seeking behavior of men as well as other risk factors affecting the male population predisposed them to have a lower life expectancy compared to women. The life expectancy of men is 68 years old while women is 74 years old.

Table 2. Sex Disaggregated Population in Davao del Norte, 2015 (projected)

Age Group	Male	Female
Under 1	11,166	10,214
1-4	48,866	44,080
5-9	58,167	51,560
10-14	54,082	49,363
15-19	53,700	51,142
20-24	51,621	47,086
25-29	43,644	39,029
30-34	40,149	35,062
35-39	33,854	30,455
40-44	30,863	27,534
45-49	26,306	24,023
50-54	23,119	20,881
55-59	18,553	16,642
60-64	12,779	11,219
65-69	7,552	7,515
70-74	5,608	5,910
75-79	3,211	3,597
80 & over	2,789	3,298

Source: PPDO

Figure 3, Population Pyramid Structure in Davao del Norte, 2015 (projected)



Source: PPDO

### Vulnerable Population and their Needs

The above data has a significant implication in the DRRM planning process considering that women, children, elderly, persons with disability (PWD) and Indigenous Peoples (IP) are the most vulnerable sectors in times of disasters. The DRRM Plan aims to address the specific needs of these vulnerable sectors in all the thematic areas.

#### Women

In Davao del Norte, the female population comprises almost half of the population at 48.7%. This means that programs, projects and activities of the DRRM Plan will take into consideration the needs of half of the population - the female population across all ages. More importantly, there is a need to increase the voice of the women and the visibility of women’s roles in and contributions to the DRRM plan, educating and mobilizing both men and women to promote gender equality in DRR, and ensure women and men’s equal access to natural hazard early warning systems.

In most rural areas, women in reproductive years mostly stay at home to take care of their young children, do household management as well as take care of sick members of the family and the elderly. Women tend to take the responsibility of carrying children and the elderly to safety. With this responsibility, women must take part in decision-making and must be well-informed on what to do in times of calamities and must act with independence in the absence of their husbands and partners.

In far flung areas, access to communication and education is limited hence women lack awareness on how to act upon warnings. All these issues have a grave consequence hence, these must be addressed in the DRRM plan.

## Children

As can be seen from Table 2 and Figure 3, it can be observed that the province has a very young population with large groups at ages 1-4 until 10-14. It is imperative in DRRM Planning to take close attention to this data regarding children and put emphasis to taking care of their needs and protection at all times. When an emergency strikes, whether a sudden onset natural disaster or an armed conflict, children require special protection to ensure their safety and well-being. UNICEF's global mandate for children specifically provides for a focus on protecting children from the immediate and long-term effects of emergencies.

Actions to protect children in emergencies are varied and far-reaching and form part of UNICEF's core commitments for children in humanitarian action. UNICEF's objectives are to actively prevent children from being harmed; to monitor violations committed against them; and to develop programs to respond to instances where children are at risk of or have been subjected to violence, exploitation or abuse.

## Youth

There is also a large group in the teenage and reproductive years, from the age range of 15-19, 20-24, 25-29 and 30-34, 35-39 years old, with male and female having almost equal in number. It is essential to consider that the teenage group, both male and female, must be given information, training and capability building activities related to preparedness and response during disasters. For example, it can be noted that generally, girls are not given training on life-saving skills such as swimming, which should be a skill that everyone must acquire regardless of sex and age, most especially among children living in flood-prone areas.

## Elderly

Elderlies are vulnerable to the impacts of disaster. With their physical capabilities and their resistance to illnesses dwindling as a result of aging holds them in the position of helplessness during disaster occurrence. But despite this, they have to be capacitated through counselling and awareness building for them to be emotionally be prepared prior to disaster. They should also be given priority during pre-emptive evacuation to ensure their safety. Facilities in the Evacuation Centers should also be responsive to the needs of the elders.

## Indigenous People

The Indigenous Peoples are also vulnerable despite their ability to understand signs of nature in determining the weather condition. Nature signs are becoming unpredictable due to climate change. The presence of armed groups in their ancestral domains places them to become susceptible during occurrence of war. Moreover, low level of and limited access to formal education limits their capacity to access emergency services from their respective local government units and other support groups in before and during times of disasters.

## Persons with Disability

Similarly, PWDs are likely to become vulnerable to risks if their needs are not satisfied, especially in times of disaster. Most of the time the PWDs bank on the kindness of their families, relatives and friends to provide help in emergency situation. Vulnerability of persons with disabilities (PWD) instigates when they are not properly documented as persons who mostly need assistance in times of calamities. As such, there is a need to map out PWDs in every Barangay so that in times of disaster they will be prioritized. They should

constantly be involved in the decision-making processes involving their welfare. Accessibility of the evacuation facilities for the PWDs must be considered in the DRRM Plan.

Generally, when disaster occurs the needs of each sector is well-considered abiding to the standards of an evacuation center adhering to the Provincial Executive Order No. 36, s. 2016. In coordination with the affected Local Government Units, men, women, children, elderly, differently abled persons, and Indigenous Peoples are provided with shelter and accommodation, Camp Management Desk and Office, toilet and bathing areas, child friendly spaces, community kitchen, Storage Areas, Laundry Spaces, Water Spaces, and Health Services. Moreover, livestock owners are provided with animal feeds to encourage them to evacuate given the provision.

As the most vulnerable group in the province the need for them to participate in the decision-making processes in matters concerning their welfare is vitally considered. As such, differently abled persons, women, elderly, farmer and youth sector organizations were enacted to become permanent members of the Provincial Disaster Risk Reduction and Management Council. Lastly, to capacitate the vulnerable sectors they have been the priority of the Council as clients in the drills and trainings and recipients of grab kits.

### Existing Land Uses

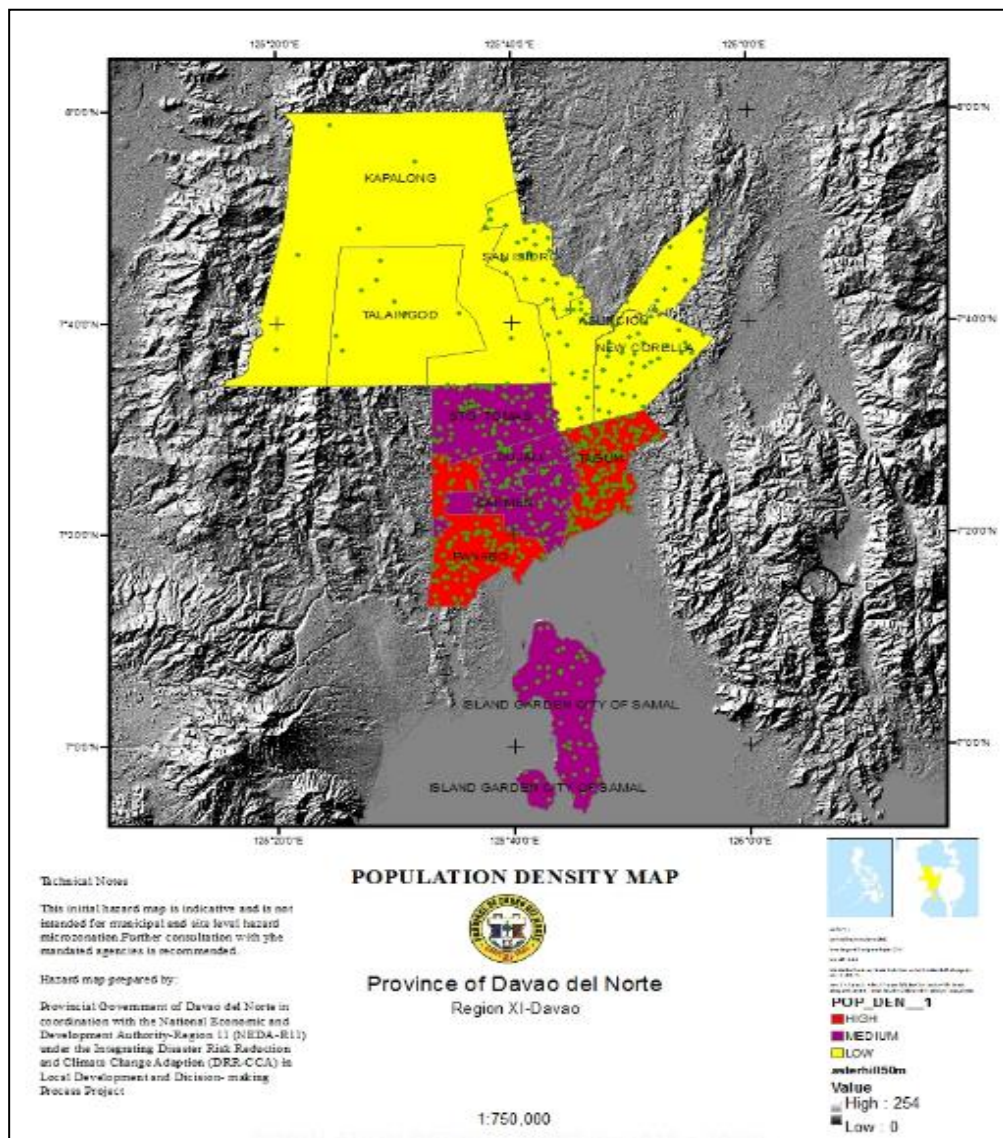
Out of the total land area of 3,462.80 square kilometers, areas classified by the DENR as Alienable and Disposable (A&D) land is 1,804.47 sq. Km. or about 53.5 percent while the remaining 1,608.33 sq. km. or 46.5 percent is classified as forestland. Area devoted to agriculture constitutes 54.7% or 1,896.634 sq. km while the built-up area comprises only 4.3% or 139.701 sq. km.

Table 3. Existing Land Use, Davao del Norte

Existing Land Use	Area (sq. Km)	% Distribution
Agriculture	1,896.634	54.7
Production Forest	336.942	9.7
Protection Forest	277.228	8.0
Brush land/shrub land	694.53	20.0
Cropland	67.984	1.9
Built-up area	139.701	4.3
Infrastructure and Utilities	49.788	1.4
<b>Total</b>	<b>3,462.80</b>	<b>100</b>

Source: PPDO, Davao del Norte

Figure 4. Land area, Classification and Use



Source: PPDO, Davao del Norte

Table 4. Existing Land Use, Davao del Norte

Existing Land Use	Area (sq. Km)	% Distribution
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Source: PPDO, Davao del Norte



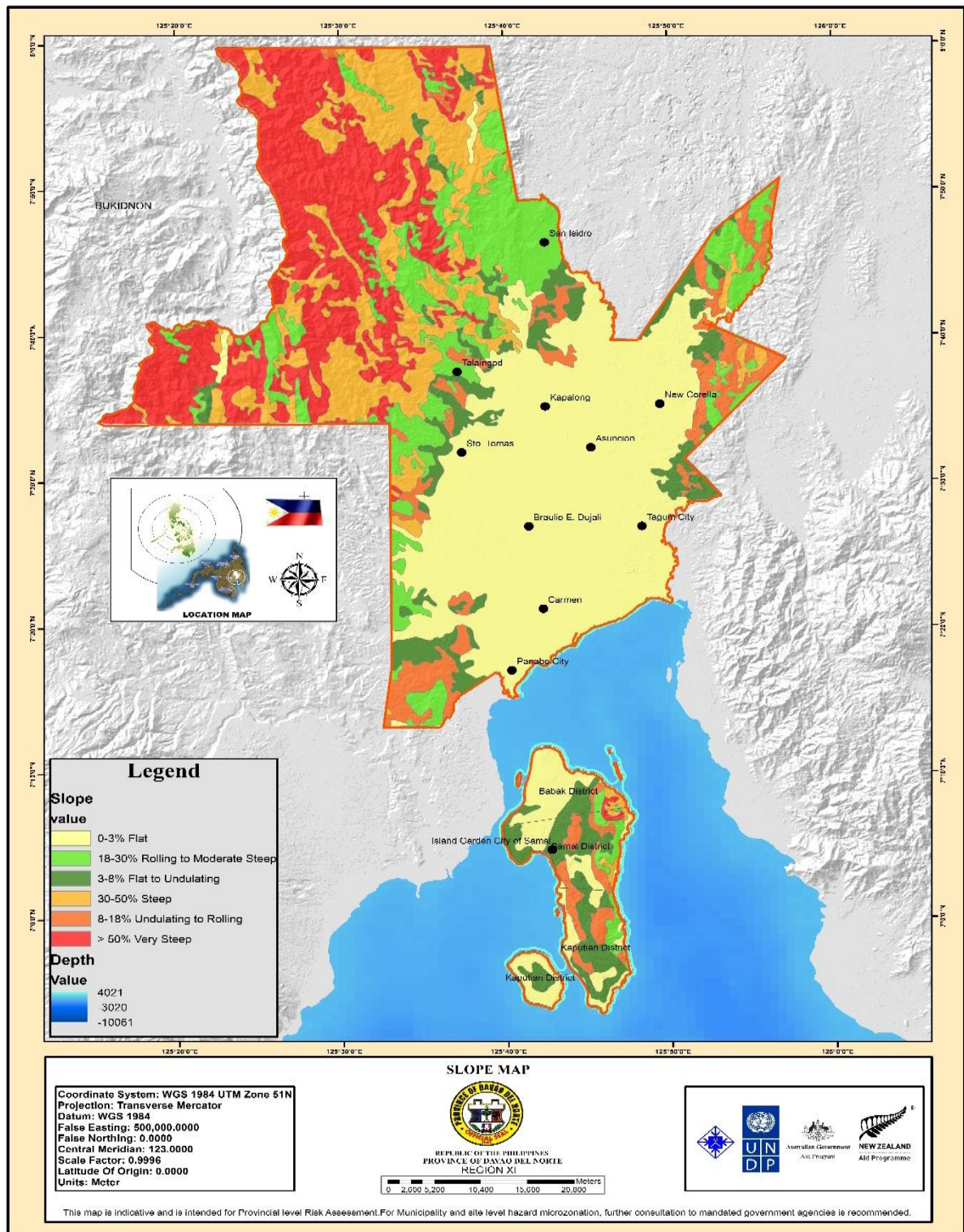
## **Topography and Slope**

Rugged, mountainous and moderately to steeply sloping areas on the western part and a wide alluvial plain on the central lowland area generally characterize the topography of the province. Comprising the major portion of the alluvial plain is a flat tract of land. However, some places are gently undulating and exhibit a rolling topography.

Davao del Norte has generally a low land terrain comprising 37 percent of the total land area with less than 100 meters elevation. The highest elevation ranging from 1000-2000 meters comprising 3 percent of the total land area is found in the municipalities of Kapalong and Talaingod.

About 53.6 percent of the total land area of the province or 185,687.11 hectares has slope range of 0-18 percent. These areas are used for agriculture, industries and settlements. The remaining 46.4 percent or 160,592.89 hectares of the province are areas with slope ranging from 18 percent to more than 50 percent.

Figure 5: Slope Map



Source: PPDO, Davao del Norte

## Water Resources

The province has abundant water supply both from surface and groundwater resources. Fifteen (15) rivers and several creeks traverse the province. The bigger rivers such as the Lasang, Tagum/Libuganon, Saug and Tuganay drain the broad plain west and north into Davao Gulf. These major rivers are part of the watersheds of the same name.

Tagum/Liboganon River with a total length of 95 kilometers is the longest among the major rivers in the province and has a total watershed area of 247,500 hectares. It is considered as one of the 18 major rivers in the country. It originates from the eastern hillside of the Mindanao Central Cordillera and flows to the central alluvial plain, and then extends to Davao Gulf.

*Table 5: Drainage Areas and Flow Rates of Major Rivers, Province of Davao del Norte*

Major Rivers	Drainage Area (km <sup>2</sup> )	Flow Rate (m <sup>3</sup> /sec)		
		Peak	Maximum	Minimum
Hijo	617	150.9	102.5	8.3
Tagum	2,326	654.7	601.9	24.1
Lasang	808	No gauging station present		

*Source: Philippine Water Resources Summary Data, NWRC  
Provincial Water Supply, Sewerage and Sanitation Sector Plan, Davao del Norte*

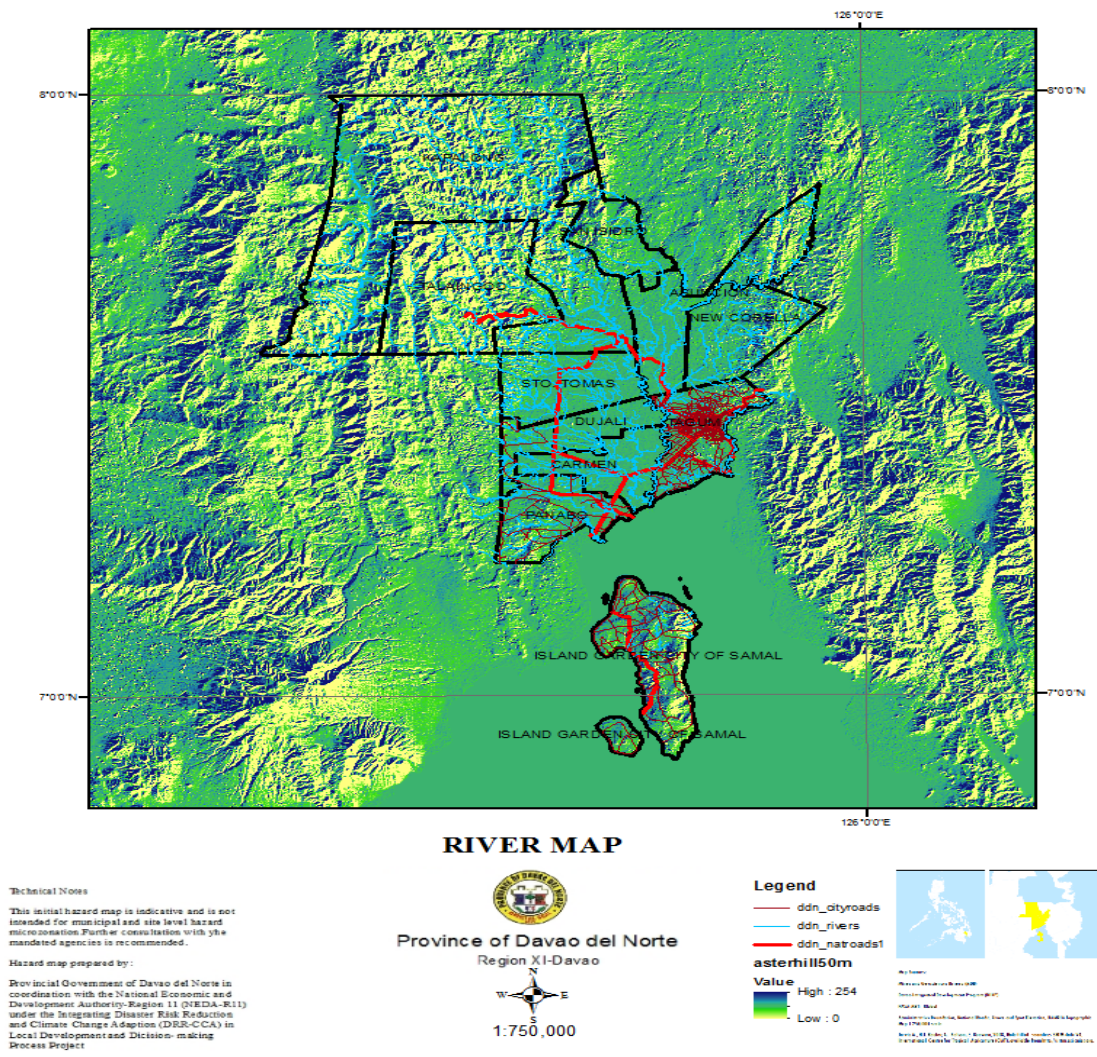
*Notes: Peak – Peak discharge of Daily Maximum Discharge  
Maximum – Maximum Daily Discharge of Weighted Daily Discharge  
Minimum – Minimum Daily Discharge of Weighted Daily Discharge*

Groundwater availability in the province is classified as deep-well and difficult area. Deep well area covers approximately 80% of the province, widely distributed in the river basins of Tagum and Davao rivers. Groundwater is the main source of drinking water in the urban centers of Tagum, Panabo, Sto. Tomas, Island Garden City of Samal, New Corella and Carmen.

About 20% of the provincial area is classified as a difficult area to exploit groundwater. Such areas are characterized by mountains in the northwestern side of the province. Springs are the common source of water in these areas. There are 157 developed springs currently serving the populace mostly in the rural areas of the province.



Figure 6: Major Rivers Province of Davao del Norte



Source: PPDO, Davao del Norte

## Mineral Resources

Davao del Norte is endowed with rich deposits of non-metallic minerals like guano, marble, limestone and others. It has an estimated total reserve of 44,845,283 MT of non-metallic minerals. The Province also has an abundant source of high grade quality sand and gravel, a major component material in construction. Tagum City, Panabo City and the municipalities of Carmen, Kapalong and Sto. Tomas are the major suppliers of sand and gravel. Total production of sand and gravel in 2008 has reached to 268,170 cu. m. In Region XI, Davao del Norte is the second largest producer of sand and gravel, next to Davao City. Comparative volume of production of this non-metallic resource in the region is presented in Table No.6

Table No. 6. Estimated Non-Metallic Resources  
Province of Davao del Norte, 2013

<b>Non-Metallic Mineral</b>	<b>Locality</b>	<b>Total Reserve (M.T)</b>
1. Guano Phosphate	Samal & Talikud Is.	112,400
2. Rock Phosphate	Samal & Talikud Is.	43,800
3. Sand & Gravel	Lasang River, Panabo City Sto, Tomas and Carmen River	1,800,000
4. Marble Deposit	Igang Tagasan, Kapalong	35,000
5. Limestone/ Lime Raw Materials	New Visayas & Ulugan Kapalong	7,854,083
6. Magnesite	Igang, Tagasan, Kapalong	35,000,000

Source: MGB XI

### Climate and Rainfall

The province has Type IV climate under the coronas classification and is characterized by unpronounced dry and wet seasons. Rainfall is more or less evenly distributed throughout the year with no pronounced rainy season and dry season. Davao del Norte is no longer typhoon-free as it is used to be. The province has experienced the onslaught of typhoon Pablo and Tropical Storm Vinta in 2012 and 2017 which brought damages to infrastructure and agriculture. The fairly pronounced rainy months in the province are from November through February. The province's mean monthly rainfall, based on data from the PAG-ASA Agromet Station in Tagum City, shows an erratic trend from 2016-2020. (Table 7).

Table No. 7: Monthly and Annual Rainfalls (in mm), 2016 - 2020, Davao del Norte

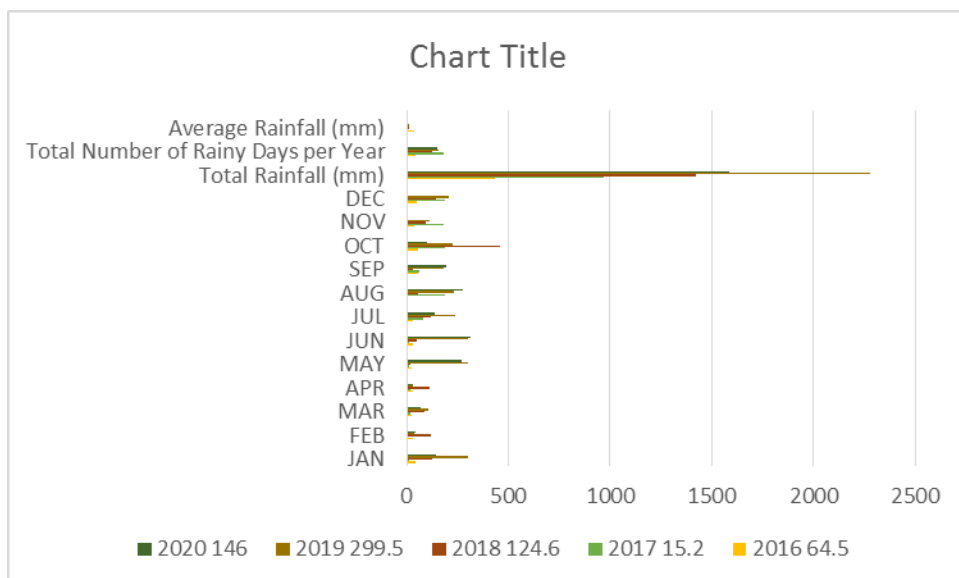
<b>MONTH</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>JAN</b>	45.34	15.2	124.6	299.5	146
<b>FEB</b>	28.8	4.25	121.2	36.5	45
<b>MAR</b>	26	15.6	90.6	108	66.5
<b>APR</b>	31	18.7	111.6	34	33.5
<b>MAY</b>	25.8	11.8	20.2	301.5	272.5
<b>JUN</b>	33.4	11.8	51.9	304	314.5



<b>JUL</b>	32.2	80.3	121	240	136.5
<b>AUG</b>	7.8	189.5	54	231	278.5
<b>SEP</b>	58.1	64.4	33.5	180	192
<b>OCT</b>	57.5	185.95	459.5	227	102
<b>NOV</b>	39.69	182.5	91	113	0
<b>DEC</b>	46.76	187.1	145	206.5	0
<b>Total Rainfall (mm)</b>	<b>432.39</b>	<b>967.1</b>	<b>1424.1</b>	<b>2281</b>	<b>1587</b>
<b>Total Number of Rainy Days per Year</b>	<b>45</b>	<b>182</b>	<b>123</b>	<b>155</b>	<b>148</b>
<b>Average Rainfall (mm)</b>	<b>36.03</b>	<b>5.31</b>	<b>11.58</b>	<b>14.72</b>	<b>10.72</b>
<i>Source: PDRRMD Office Automated Rain Gauge (ARG) Station in the Province of Davao del Norte 2017-2020 PAG-ASA Tagum City Agromet Station as cited in the SEEP of Davao del Norte 2016</i>					

Based on available information average rainfall intensity from 2016 - 2020 showed an erratic trend as can be seen in the Figure below. The monthly data also shows that there is no pronounced dry and wet season in the province.

Figure No 7: Monthly and Annual Rainfall (mm), Davao del Norte, 2016 - 2020



Based on PAG-ASA at Tagum City, average temperature in the years 2016 - 2020 has remained at 31.14°Celsius, slightly cooler than the average of 32°C in the previous five years (2011-2015).

Figure No.8: Annual Temperature (°C), 2016-2020, Davao del Norte

MONTH	2016		2017		2018		2019		2020	
	TEMP	RH	TEMP	RH	TEMP	RH	TEMP	RH	TEMP	RH
JAN	31.2	87.0	34.1	86.3	27.2	83.2	27.8	72.0	30.0	64.4
FEB	32.6	75.0	33.9	81.9	28.9	80.8	28.4	63.1	30.6	57.8
MAR	32.3	6.0	34.3	79.6	28.6	77.0	28.9	64.8	31.2	56.9
APR	33.2	91.0	35.3	6.4	29.2	78.0	30.2	62.5	30.7	61.4
MAY	33.1	77.0	34.6	77.4	28.8	74.3	30.6	68.1	30.6	68.8
JUN	32.8	75.2	34.6	76.0	30.5	75.4	29.6	72.8	29.3	74.0
JUL	32.0	75.8	34.5	73.1	32.2	68.1	30.1	65.7	29.0	73.1
AUG	32.7	77.3	33.8	79.8	30.8	66.8	29.1	76.2	29.5	71.8
SEP	31.9	78.1	34.6	79.3	29.9	66.8	31.0	62.0	29.9	69.6
OCT	31.8	76.5	35.2	77.4	29.5	67.3	30.4	66.9	28.4	75.5
NOV	32.1	78.2	34.7	88.0	28.8	70.2	30.7	64.8	0.0	0.0
DEC	31.3	88.0	34.5	79.2	28.5	73.0	29.0	67.6	0.0	0.0
<b>Average</b>	<b>32.3</b>	<b>73.8</b>	<b>34.5</b>	<b>73.7</b>	<b>29.4</b>	<b>73.4</b>	<b>29.6</b>	<b>67.2</b>	<b>29.9</b>	<b>67.3</b>

Source: Davao del Norte PDRRMD Automated Weather Station

## PROTECTED AREAS

Davao del Norte's protection lands include the Mangrove Swamp Forest Reserve in Babak, Non-NIPAS, Network of Protected Areas for Agricultural Development/Strategic Agriculture and Fisheries Development Zone (NPAAD/SAFDZ) and severely eroded areas.

NIPAS areas in Davao del Norte are the 7,656 hectares Samal Island Protected Landscape/Seascape which was proclaimed under Proclamation No. 2152.

The Non-NIPAS areas cover second growth forest above 1000 m. elevation or more than 50% slope, mangrove forest and buffer strips along rivers and escarpments. Approximately, 47,758.83 hectares are under this category of protection lands.

SAFDZ area in the province is accounted at 132,382 hectares. The identification and setting aside of the NPAAD and SAFDZ ensure that the future expansion of successful agriculture and fishery production promoted under the Agriculture and Fishery Modernization Act (AFMA) shall be done on economically and environmentally suitable lands.

*Table No. 8 Area of Major Categories of Protection Lands and SAFDZ  
By City and Municipality, Province of Davao del Norte*

City/Municipality	NIPAS (has.)	Non-NIPAS (has.)	Areas with severe erosion (has.)	SAFDZ (has.)	Total
Asuncion			10,175.8	8,337	18,512.8
B.E Dujali				8,712	8,712.0
Carmen				16,910	16,910.0
Kapalong		27,808.83*	78,200.3	11,661	89,861.3
New Corella		26.40*	6,542.0	16,377	22,919.0
San Isidro	-	-	-	-	-
Sto. Tomas		134.80*	5,724.8	18,750	24,474.8
Talaingod		19,434.50*	37,461.5	1,475	38,936.5
IGC of Samal	7,656.00	-	6,141.6	23,371	29,557.1
Panabo City			3,231.5	13,400	16,736.5
Tagum City				13,389	13,389.0
Davao del Norte	7,656.00	47,758.83*	147,477.5	132,382	279,759.5

\* within areas affected by severe erosion

Data for San Isidro is still included in Asuncion and Kapalong

Source: SAFDZ, DA-BSWM, 1997

PPFP, Davao del Norte

## ENVIRONMENTALLY CRITICAL AREAS

Environmentally critical areas include flood prone areas, areas susceptible to soil erosion, salt water intruded areas and areas traversed by geologic fault lines.

Areas subject to natural hazards include those weather-related hazards to earthquake-induced hazards and those subject to volcanic hazard. Fault line is one natural hazard where lateral or vertical displacement (movement) is likely to occur. Episodic movements along this “active” fault lines cause earthquakes with accompanying destruction of property and may be loss of life.

The vulnerability assessment relative to flooding, landslides and earthquake hazards was conducted by Mines and GeoSciences Bureau (MGB). The results were translated into GIS maps. Among the critical areas identified by the MGB as critical are Sitio Mesolong of Municipality of Talaingod, Brgy. Mambing, Municipality of New Corella and Brgy. Sawata, Municipality of San Isidro.

*Mambing, New Corella, Davao del Norte*



*Sitio Mesolong, Talaingod, Davao del Norte*



Sawata, San Isidro



**LOCAL ECONOMY**

The economy of the province is based in agriculture. Vast tracks of land are devoted to agricultural production of staple and industrial crops. Consolidating the production incomes would indicate that it is so. Table No. 9 shows the incomes generated by LGU from the major sectors, such as agriculture, industries, services, wood, quarrying and tourism.

Table No. 9 Provincial Income from Major Sources in Php (Million),  
By City/Municipality: CY 2013 Province of Davao Del Norte

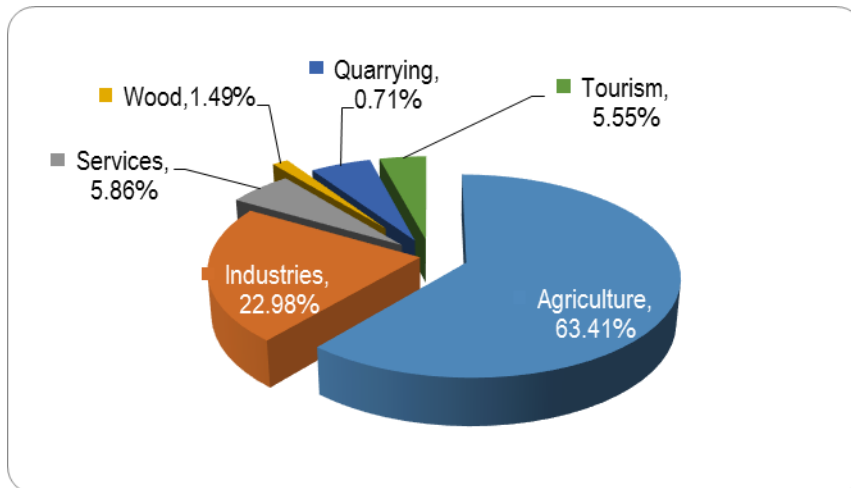
LGU	Agriculture	Industries *	Services *	Wood	Quarrying	Tourism	Total
Tagum	2,085.00	4,109.00	1,368.59	257.60	121.64	625.94	8,567.77
New Corella	1,675.00	240.618	6.19	7.75	0.13	201.59	2,131.28
Asuncion	1,636.00	958.409	2.86	5.70	0.44	1.79	2,605.20
Kapalong	2,141.00	534.209	552.54	23.12	24.59	34.32	3,309.78
Talaingod	635.00	0.37	0.53	23.75	120.00	3.59	783.24
San Isidro	1,319.00	42.69	0.89	7.05	-	0.15	1,369.78
Panabo City	5,072.00	3,476.00	84.95	215.66	5.22	54.82	8,908.65
Sto. Tomas	5,520.00	-	-	4.46	6.45	75.96	5,606.87
Carmen	2,601.00	237.77	326.73	61.06	22.65	38.33	3,287.53
BE Dujali	1,761.00	122.45	122.25	-	-	0.55	2,006.26
IGCSamal	2,434.00	18.87	18.97	25.30	-	1,314.00	3,811.14
Davao del Norte	26,879.00	9,740.39	2,484.50	631.45	301.11	2,351.04	42,387.49



% Share	63.41	22.98	5.86	1.49	0.71	5.55	100.00
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Source : Agriculture – Provincial Agriculturist’s Office & Bureau of Agricultural Statistics  
 Industry and Services - Department of Trade and Industry  
 Wood and Quarrying - Dept. of Environment and Natural Resources & PENRO-LGU  
 Tourism – Provincial Information Office – Tourism Office

Figure No.9 . Provincial Income from Major Sources



It can be seen that agriculture is contributing most of the provincial income accounting for a total of P 26,879.00 billion in 2013. This is followed by industries sector with P9, 740.39 billion; then the services sector with P 2,484.50 million and tourism sector with P 2,351.04 million. The investments reflected for the industries sector include all industries’ capitalization which was monitored by the Board of Investments, the Department of Trade and Industry (DTI), Securities Exchange Commission (SEC) and other authorized entities.

**B. INSTITUTIONAL (LDRRMC AND LDRRMO STRUCTURE)**

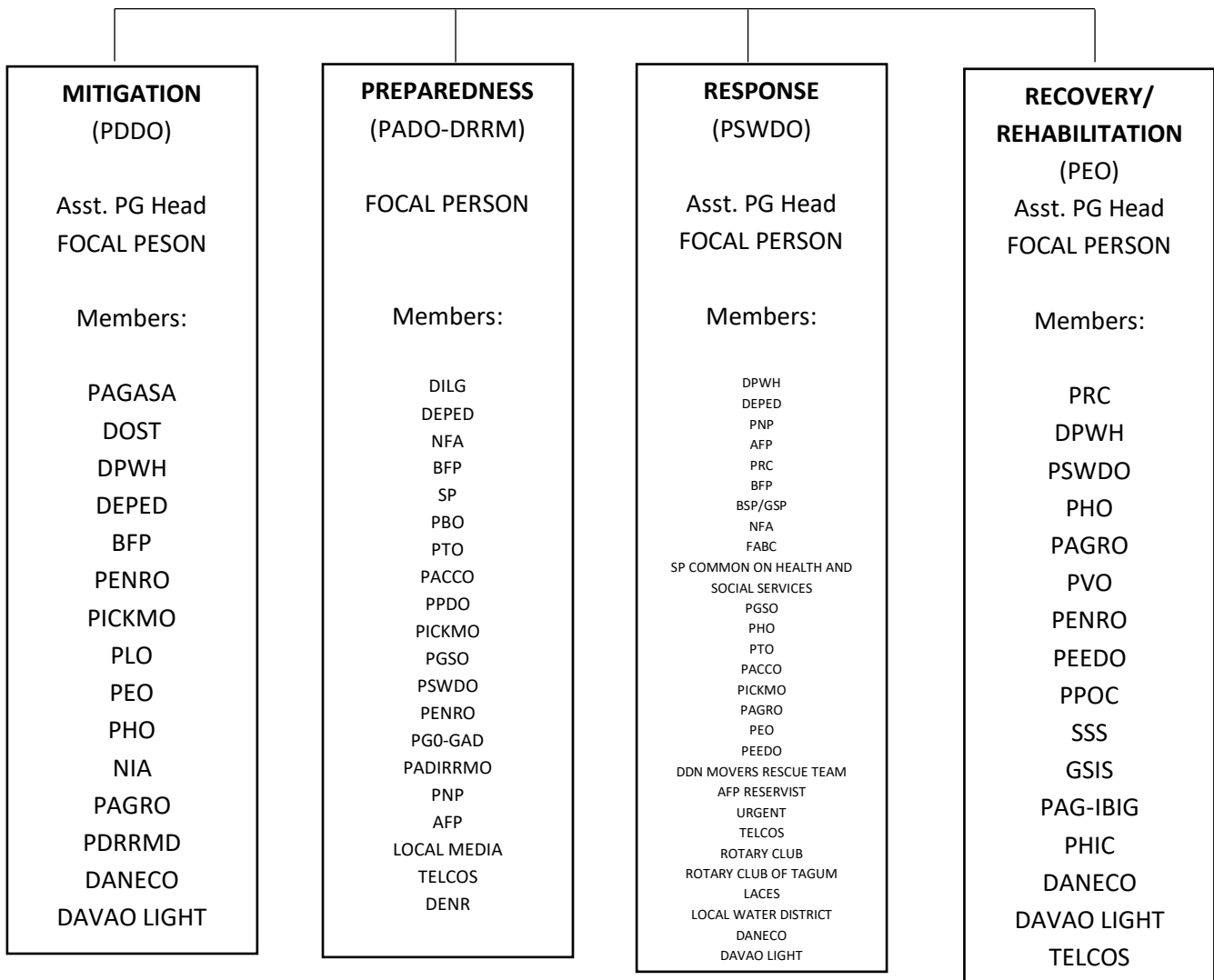
**LDRRMC STRUCTURE**

GOV. EDWIN I. JUBAHIB  
CHAIRMAN, PDRRMC

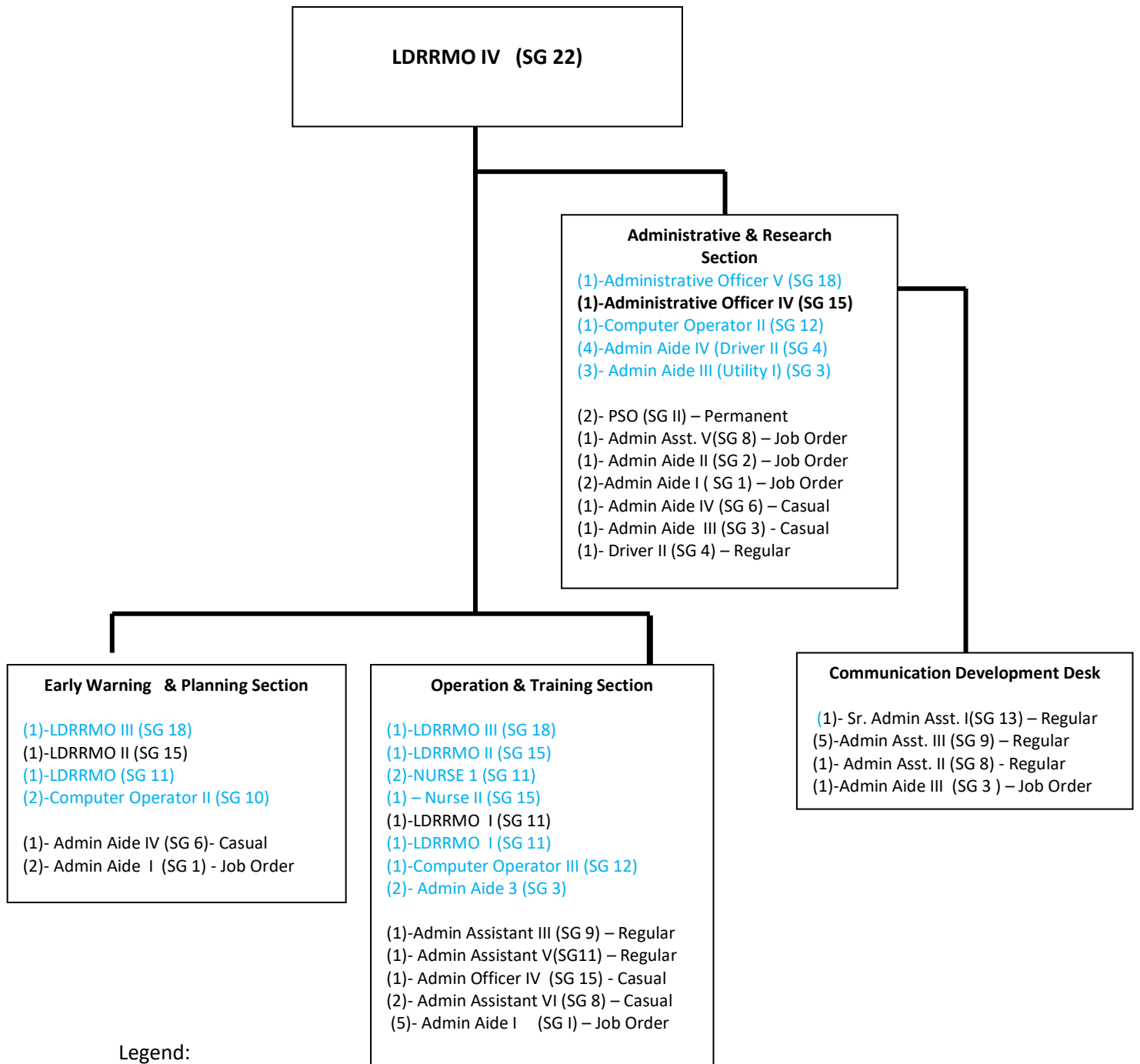
HON. REY T. UY  
VICE CHAIRMAN, PDRRMC

\*MEMBERS

**SECRETARIAT  
(PDRRMO)**



# LDRRMO STRUCTURE



Legend:

**Approved Position**

**Existing Position**

## HAZARD AND RISK PROFILE

During the workshop conducted by the TWG with the frontline PDRRMC agencies, CSOs, the Local Disaster Risk Reduction and Management Councils and Officers of the component cities and municipalities, flooding has been identified as the most frequent and high-risk hazard experienced by Davao del Norte. It is followed by landslides. Please refer to Table No. 10.

Table No 10. Hazard Profile and Assessment, Province of Davao del Norte

Type of Hazards	Frequency of Occurrence			Extent of Damage		
	H	M	L	H	M	L
<b>Natural Hazards:</b>	H			H		
Flooding	H			H		
- River flooding						
- Flash floods						
- Urban flooding						
- Sheet flooding						
Typhoon ( Agaton, Crising, Zoraida, Pablo)		M		H		
Landslide (rain induced/earthquake induced)	H				M	
Localized Freak Tornado		M			M	
Tail-end of Cold Front		M			M	
Inter Tropical Convergence Zone (ITCZ)		M			M	
Low Pressure Area		M			M	
Earthquake			L			L
<b>Human –Induced Hazards</b>						
Armed Conflict (social unrest)			L	H		
Fire			L			L
Epidemic			L			L
- dengue						
- diarrhea						
Crop infestations	H			H		

The level of risks on the likelihood to occur of the identified hazards were categorized as HIGH which means there is high probability of occurrence; MEDIUM means occasional and seldom to happen and LOW with low probability of occurrence or improbable-less likely to occur.

The extent of damage or the level of risks on the impacts of hazards were also categorized as HIGH which means high impact with major damages and also high severity which is catastrophic and critical. MEDIUM means with medium impact and moderate damage. LOW means with low impact and minor damage.

## HYDROMETEOROLOGICAL HAZARD

### Hazard Characterization

#### Flooding

Alluvial plains of Davao del Norte are mostly affected by flooding due to its low physiography and the inability of the nearby rivers to cope with high flood discharge due to heavy siltation of the rivers and other waterways, thereby limiting the physical and economic productivity of the land. About 360 square kilometers or 11.20 percent of the total provincial lands are prone to flooding. The municipalities of Carmen, Asuncion, B.E. Dujali, Kapitalong and New Corella, and the City of Tagum are among the LGUs with a large area prone to flooding (Table 11). Floods (river flooding, dike overflows, sheet flooding and urban flooding) and flashflood incidence in the past has become a challenge to the resiliency of the Dabaonons. In the recent year minimal flooding has been recorded due to the dredging activities in Tuganay and Liboganon Rivers.



Table 11. Areas Susceptible to Flooding, Davao del Norte (in hectares)

City/Municipality	Very High Susceptibility Area (VHSA)	High Susceptibility Area (HSA)	Moderate Susceptibility Area (MSA)	Low Susceptibility Area (LSA)
Asuncion	3,222.64	5,671.44	1,438.09	514.20
B.E. Dujali	1,162.25	4,907.80	2,373.55	417.46
Carmen	475.12	6,218.12	4,825.53	4,236.41
Island Graden City of Samal (IGACOS)	0	0	0	0
Kapalong	1,836.32	3,608.66	2,446.53	1,357.52
New Corella	737.87	3,056.07	2,049.01	1,277.84
Panabo City		1,276.02	1,836.77	7,334.31
San Isidro	157.02	183.32	291.71	0.71
Sto. Tomas	1,358.35	2,947.34	3,974.09	6,341.92
Tagum City	655.92	2,357.27	87.64	51.08
Talaingod		1.60	2.03	
<b>Davao del Norte</b>	<b>9,605.48</b>	<b>30,227.65</b>	<b>19,324.95</b>	<b>21,531.45</b>

Note: Area generated thru GIS from the MGB Map



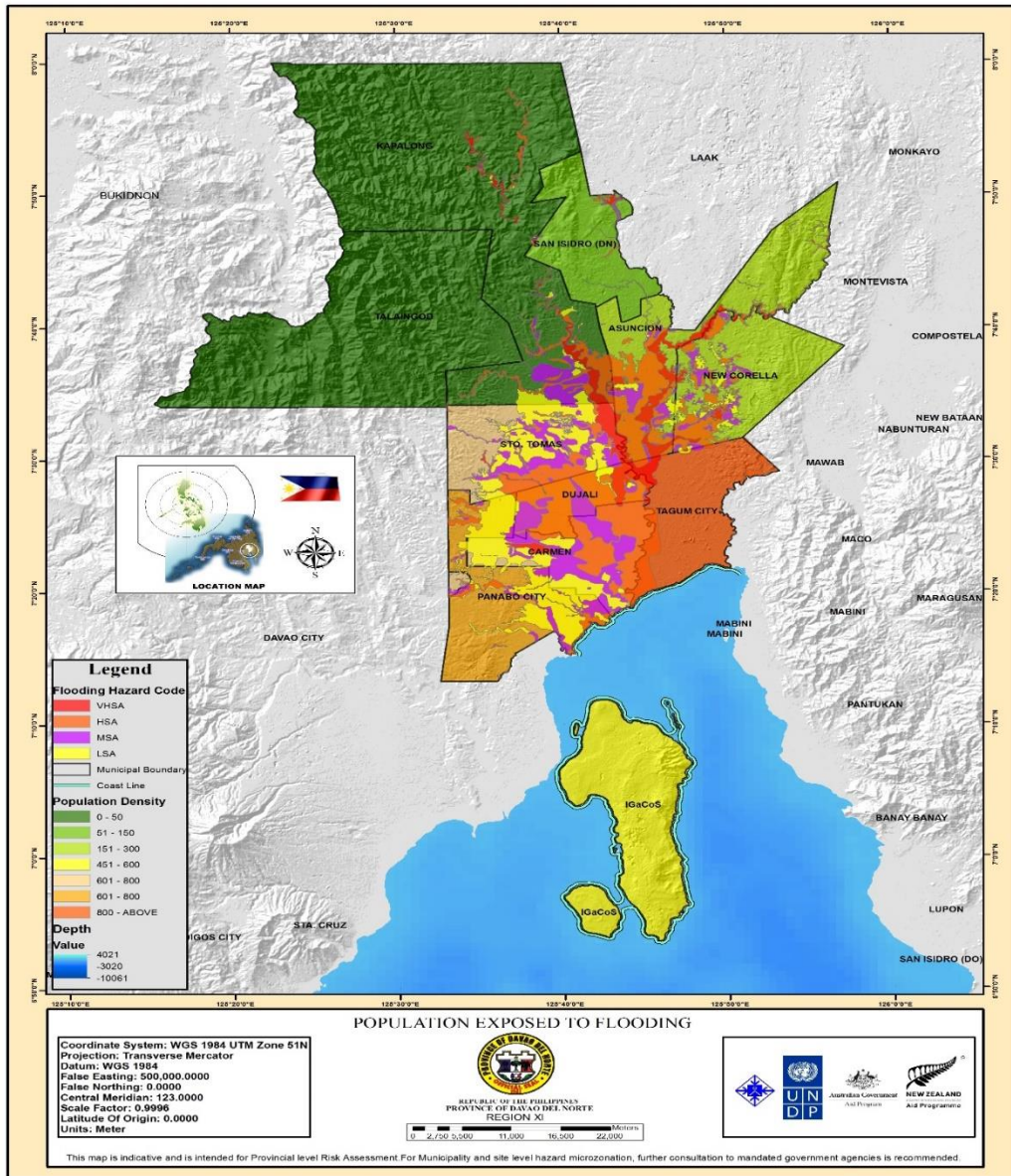
Population exposed to flooding is also presented in the next Table.

Table 12 . Exposed Population to Flood, Davao del Norte

City/Mun	Population 2010	Exposure				Percentage Exposure			
		Very High Susceptibility	High Susceptibility	Moderate Susceptibility	Low Susceptibility	Very High Susceptibility	High Susceptibility	Moderate Susceptibility	Low Susceptibility
Asuncion	50,731	7,391	13,008	3,298	1,179	14.57%	25.64%	6.50%	2.32%
B.E. Dujali	24,886	4,489	18,957	9,168	1,613	18.04%	76.18%	36.84%	6.48%
Carmen	61,656	2,330	30,497	23,667	20,778	3.78%	49.46%	38.39%	33.70%
Kapalong	61,763	1,597	3,138	2,127	1,180	2.59%	5.08%	3.44%	1.91%
New Corella	46,311	1,889	7,823	5,245	3,271	4.08%	16.89%	11.33%	7.06%
Panabo City	154,329	-	10,890	15,675	62,590	-	7.06%	10.16%	40.56%
San Isidro	24,696	250	292	471	1	1.01%	1.18%	1.91%	.005%
Sto. Tomas	97,210	8,159	17,703	23,871	38,094	8.39%	18.21%	24.56%	39.19%
Tagum City	215,967	9,736	34,990	1,301	758	4.51%	16.20%	0.60%	0.35%
Talaingod	19,600	-	1	1	-	-	0.005%	0.006%	-

Source: GIS generated data based on the Population Density and Flood Prone Maps

Figure 10: Flood Hazard Map



Note: Area generated thru GIS from the MGB Map, PPDO, Davao del Norte

### Flood Occurrence

The recurrence of floods almost every year in the province reveals its vulnerability to the hazard based on the flooding events recorded from year 2006 to 2014. The municipalities of Carmen, B.E. Dujali, Asuncion, New Corella, Kapitalong and the City of Tagum are mostly affected by flood occurrences. The lowland areas of these municipalities form the greater plain area and the central part of the province. Flood events usually occur in the 1<sup>st</sup> and the last quarter of the year. Population displacement usually happened during flooding. Agricultural lands, crops, livestock and infrastructure were also destroyed or damaged every time flooding occurs.

In December 4, 2012, typhoon Pablo hit Davao del Norte and caused massive destruction in the province and its neighboring provinces of Compostela Valley and Davao Oriental. A 25 mm per hour rainfall was recorded in the Automatic Weather Systems installed at the

PDRRMC Operations Center in the Provincial Capitol at the height of the typhoon. The recorded rainfall intensity was more than enough to submerge most areas of Davao del Norte, particularly the flood prone areas and those areas lying along the major river courses of Libuganon, Saug, Tuganay and Hijo river damaging Php 2.62 Billion of the Banana Industry. Around 13,600 cavendish banana workers were greatly affected by losing at least Php 300.00 per day for four to nine months. In an unabated condition, affected populace clamored for government assistance and subsidies, and a number of them were added to the recipients to the 4Ps program of the government.

Tropical Storm Vinta also contributed to loses incurred by the province in 2017 amounting to P194,696,910.23 in Agriculture and livelihood.

The damages of both disasters to roads and bridges greatly affected the delivery of goods and services to areas served by the networks. It stagnated development and caused inconveniences and artificial shortages of basic goods in the area affected.

Overlaying the administrative map and the flood prone map, there are a total of 181,971 persons in the province that are highly exposed to flood which is 20 percent of the total population. In terms of the most exposed populations, Tagum City with 80,666 population rank first among the local government units. But in terms of the percentage of population that is exposed to hazard, the municipality of Carmen has the highest percentage with 46 percent. B.E Dujali ranks second with 35 percent.

In terms of agriculture area, 20 percent or 30,687 hectares of the 150,836 hectares agricultural lands are exposed to flooding.

Table 13. Agricultural area exposed to flood, Davao del Norte

City/Municipality	Total Agricultural Area (Has.)	Exposed Agricultural Area	Exposure percentage
Asuncion	18,060	5,539.07	31%
BE Dujali	8,584	3,177.15	37%
Carmen	14,780	6,908.99	46%
IGaCoS	25,600	-	-
Kapalong	14,930	1,488.65	10%
New Corella	9,597	4,013.24	42%
Panabo City	16,140	1,840.59	11%
San Isidro	12,470	469.54	4%
Sto. Tomas	16,000	2,592.03	16%
Tagum City	10,360	4,658.54	45%
Talaingod	4,315	-	-
TOTAL	150,836	30,687.79	20%

Source: PPDO, Davao del Norte

Out of the 14,298 hectares built-up areas, 2,851 hectares or 19 per cent are exposed to flooding. The Municipality of New Corella has the highest percentage followed by the Municipality of Carmen.

Table 14. Built-up Area Exposed to Flood

City/Municipality	Total Built-up Area (Has.)	Exposed Built-up area within flood prone (Has.)	% Exposed within flood prone
Asuncion	390.30	193.60	50%

BE Dujali	278.72	0	0
Carmen	905.81	541.26	60%
IGaCoS	952.36	0	0
Kapalong	785.46	392.36	50%
New Corella	342.56	309.51	90%
Panabo City	3,709.20	740.77	20%
San Isidro	135.03	0	0
Sto. Tomas	705.61	0	0
Tagum City	5,945.14	673.49	11%
Talaingod	148.28	0	0
<b>TOTAL</b>	<b>14,298.47</b>	<b>2,851.00</b>	<b>19%</b>

Source: PPDO, Davao del Norte

Based on the destruction of properties and its effects on the victims and their families, flooding proved to be the number one on the list of disasters in the Province. A rundown of flood and flashflood occurrences that have affected the province in the past is presented in Table 15.

Table No. 15: Flooding Incidents, Davao del Norte(2015-2020)

Date	Hazard	Hazard Event and Description	Affected LGUS	Affect ed Baran gays	Affected Individuals	Affected Families	Damages To Agricultural Infrastructure, Families Forestry, Political, Social, Coastal/Marine Habitats (Indicate Cost If Available)
January 26, 2019	Tail –end of a Cold Front	Flooding	Asuncion Sto. Tomas Carmen Kapalong Braulio E. Dujali New Corella, Tagum City			47,960	Agriculture worth P302,633,620.55; Livestock and Poultry worth P5,463,520.00; and Infrastructure worth P18,787,000.00;
January 11-13, 2019	Trough of Low Pressure Area	Flooding	Asuncion Kapalong New Corella Carmen Tagum City		61,305 6,245 350 530 425	12,261 1,249 70 106 85	Agriculture – 730,621.65 Infrastructure – 22,594,310
December 21, 2017	Tropical Storm Vinta	Flooding	Talaingod Kapalong Asuncion New Corella B.E. Dujali Carmen Tagum City San Isidro Sto. Tomas		108 27,904 77,130 15,370 21,275 84,125 25,040 1,180 69,010	27 8,039 15,426 3,080 4,255 16,825 6,260 236 12,061	Agriculture and Livelihood – P194,696,910.23
January 18, 2017	Tail-end of Cold Front	Flooding	Kapalong Asuncion New Corella, B.E. Dujali, Tagum City, Carmen;			21, 245	Agriculture- P8, 411, 024.00 Fisheries - P4, 414, 666 Livestock- P10, 822, 372.00 Infrastructure P285, 672, 500.00
7 January 2015	Tropical Storm Seniang	Flooding	Asuncion	13	22,275	4,455	Wooden bridge totally damaged by flood
			New Corella	10	425	85	Rice – 915,146.41
			Tagum City	1	105	32	

Source: Provincial Disaster Risk Reduction and Management Division, Davao del Norte



## Landslides

The GIS generated Rain-Induced Landslide Map from the MGB shows the areas susceptible to the hazard. Based from GIS generated map, 33 barangays in 6 municipalities and 1 city have areas with high susceptibility to rain-induced landslides. These barangays are located in areas with high elevation and steep slopes.

These 33 barangays represents 14.7 percent of the total barangay of the province. Among the municipalities, Kapalong have the widest area which are high susceptible to landslide at 564.349 sq. km., followed by Talaingod with 349.149 sq. km. Majority of the area of these two municipalities are classified as forestland, with 91.4 percent for Talaingod and 81.4 for Kapalong. Please refer to Table 16.

*Table 16. Rain Induced Landslide Susceptibility Level, Davao del Norte*

City/Municipality	Susceptibility in has.		
	High	Moderate	Low
Tagum City	56.00	843.90	3,309.10
Asuncion	1,296.80	3,946.70	12,433.00
New Corella	2,908.00	4,298.40	9,256.80
Kapalong	56,434.90	24,905.60	23,671.10
San Isidro	10,176.90	9,123.00	6,038.30
Talaingod	34,914.90	6,736.60	2,780.60
Island Garden City of Samal	6,314.45	15,562.29	5,742.96
Sto. Tomas	112.60	2,186.70	7,085.90
Panabo City		102.70	11,605.00
Carmen			558.90
<b>Davao del Norte</b>	<b>112,214.55</b>	<b>67,705.89</b>	<b>82,481.66</b>

Note: GIS generated data based on the MGB map

Data from the PDRRMD indicates that the province has experienced landslide though in a relatively small magnitude from 2008 to 2016. Fortunately, no damages on person and properties were reported but agricultural crops were greatly affected including accessibility of the areas. Majority of landslides occurred in the Municipality of Talaingod. The Landslide Monitoring Sensor installed in Mesolong, Talaingod by Phivolcs showed fast movement of the ground as manifested in the reports gathered. The durian tree in figure 11 illustrates the ground movement in Mesolong, Talaingod. It shows that for less than a year, ground movement have caused a more than 1 meter split on the trunk of the durian tree.

Figure 11. Photos on the ground movement at Mesolong, Talaingod

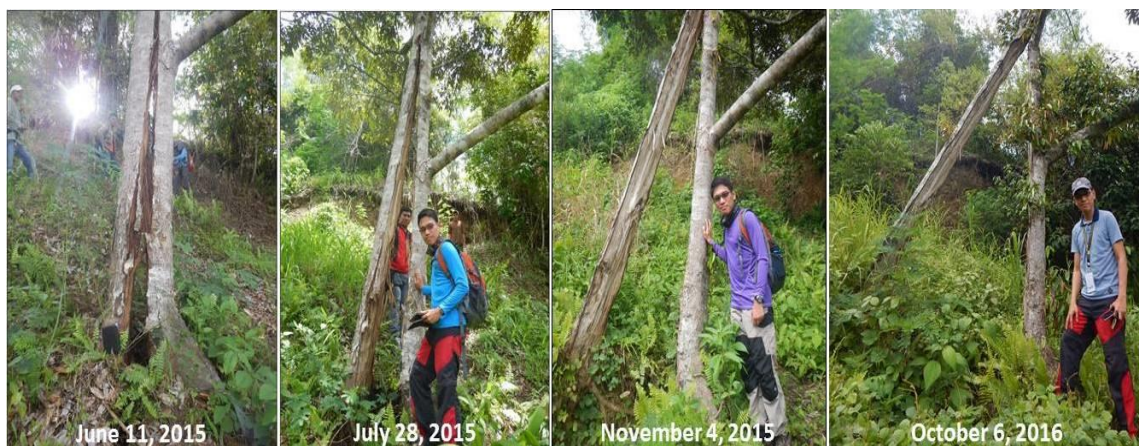
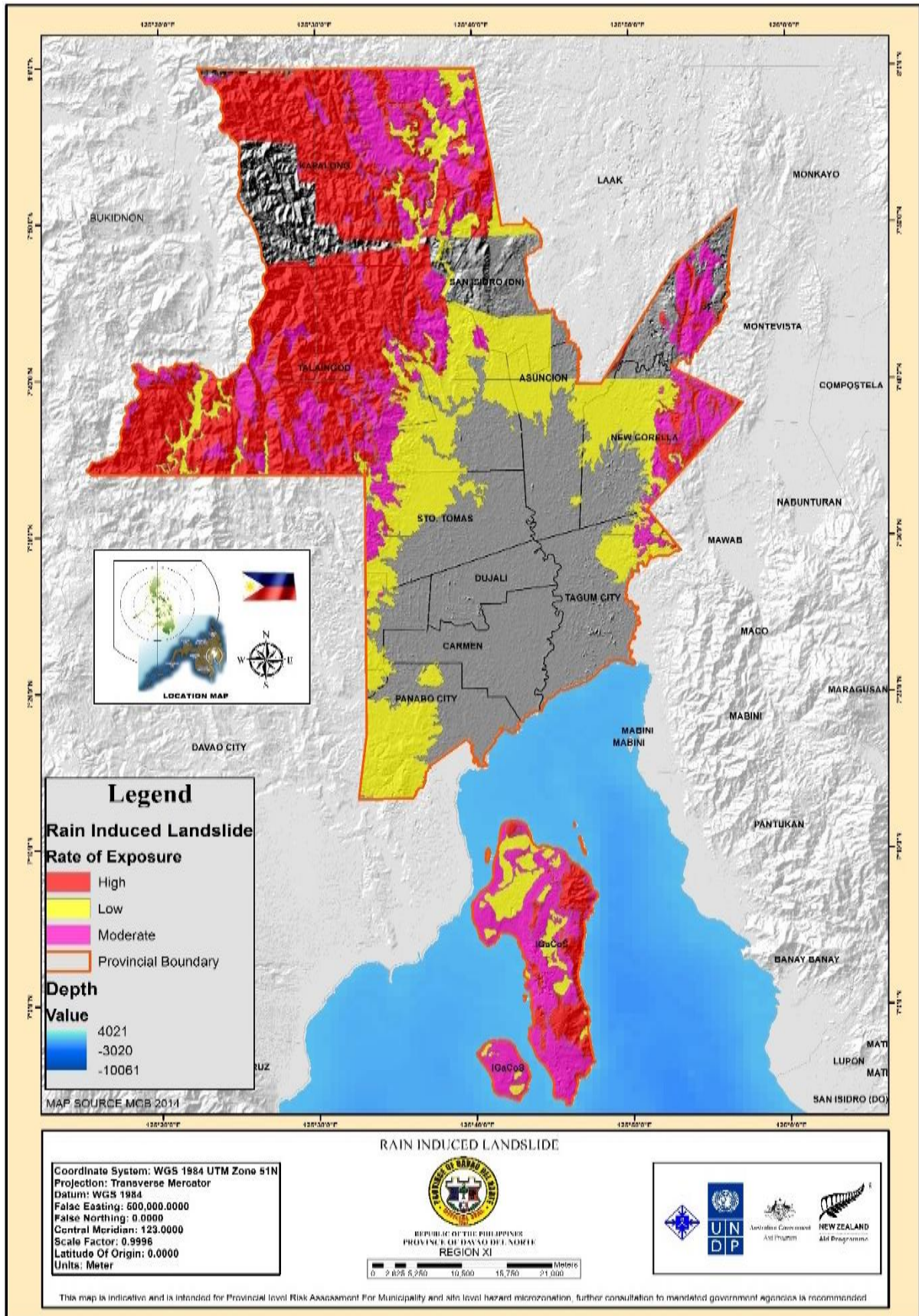




Figure 12: Rain-Induced Landslide Map



Source: PPDO, Davao del Norte

Table 17. Agricultural Areas Exposed to Rain Induced Landslide  
Davao del Norte

LGU	Total Municipal Agricultural Area	Exposed Agricultural Area within HSA	Exposed Agricultural Area within MSA	Exposed Agricultural Area within LSA	Exposure percentage w/in HAS	Exposure percentage w/in MSA	Exposure percentage w/in LSA
Asuncion	18,058.09	865.26	2,051.45	5,120.01	.04%	.11%	28.3%
BE Dujali	8,584.169	-	-				
Carmen	14,775.6	-	-	23.82			1.6%
IGaCoS	25,598.35	-	-	-			
Kapalong	14,937.3	207.46	445.01	7,927.58	01%	02%	53.07%
New Corella	9,616.434	-	30.20	4,359.91		3.14%	45.33
Panabo City	16,138.56	-	-	7,425.76			46.01%
San Isidro	12,474.51	224.43	-	4,806.98	01%		38.53%
Sto. Tomas	16,002.6	5.99	0.26	3,892.64	3.74%	1.5%	24.32%
Tagum City	10,358.97		312.16	865.19		3%	8.35%
Talaingod	4,315.339	122.69	1,213.43	1,818.01	02%	28%	42.12
<b>TOTAL</b>	<b>150,836</b>	<b>1,425.83</b>	<b>4,052.52</b>	<b>36,239.92</b>	<b>9.45%</b>	<b>2.68%</b>	<b>24.02%</b>

Source: PPDO, Davao del Norte

Note: GIS generated data based on the existing land use map

Out of the 150,836 hectares agricultural areas, 1,425 hectares or 9.45% are classified as highly susceptible areas to rain-induced landslides mostly in the municipalities of Asuncion, Kapalong, San Isidro, Sto. Tomas and Talaingod.

The municipality of Kapalong has the most number of populations with 29,346 that are highly susceptible to rain-induced landslide. It is followed by the municipality of Talaingod with 18,854 populations exposed to highly susceptible areas. These two municipalities have the largest upland areas in the province.

Table 18. Population Exposed to Rain-Induced Landslide  
Province of Davao del Norte: CY 2013

City/ Municipality	Population	Population Exposure within the HSA	Population Exposure within the MSA	Population Exposure within the LSA	Exposure percentage of population within the HSA	Exposure percentage of population within the MSA	Exposure percentage of population within the LSA
Asuncion	55,844	2,594	7,893	24,866	5%	14%	45%
Carmen	69,199			2,320			3%
Kapalong	68,261	29,346	12,950	12,308	43%	19%	18%
New Corella	50,699	6,543	10,094	20,827	13%	20%	40%
San Isidro	25,548	1,628	1,459	9,661	6%	6%	38%
Sto. Tomas	109,269	571	11,086	35,925	1%	10%	33%
Talaingod	25,566	18,854	5,231	1,501	74%	20%	6%
IGaCoS	95,874		58,067	21,429		55%	20%
Panabo City	174,364		734	82,976		0.4%	48%
Tagum City	242,801	701	10,565	41,429	0.2%	4%	17%

<b>Total</b>	<b>945,764</b>	<b>60,237</b>	<b>60,012</b>	<b>231,813</b>	<b>20.3%</b>	<b>11.7%</b>	<b>27.6%</b>
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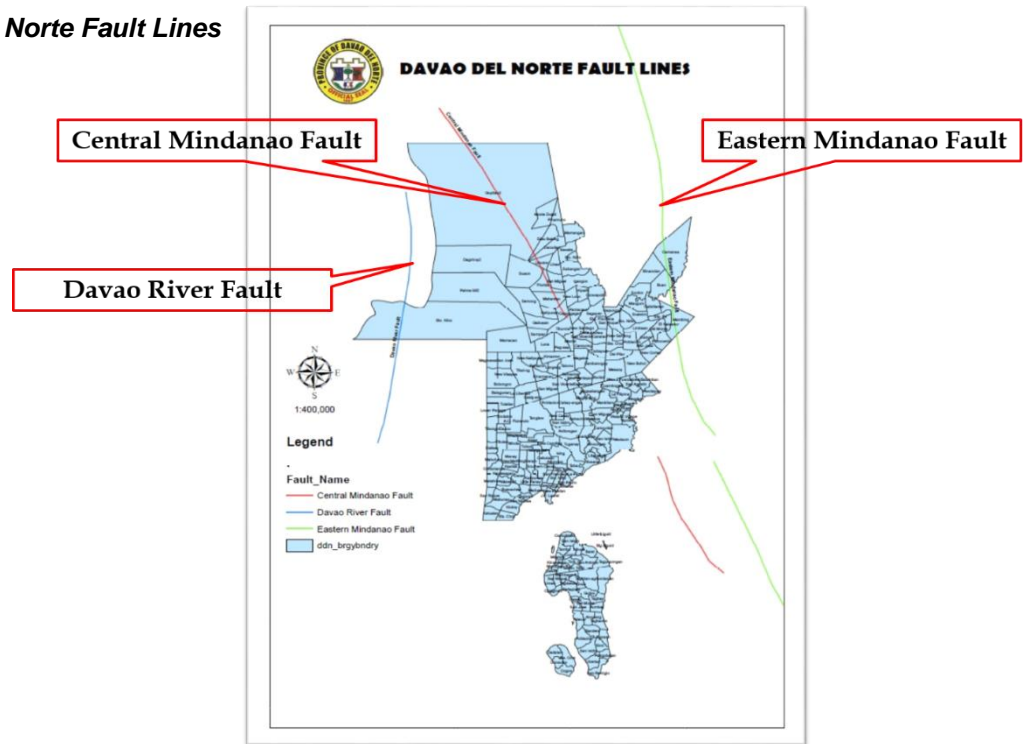
Source: GIS generated data based on the MGB map

## GEOLOGIC HAZARD

### Earthquake and Earthquake-Induced Hazards

Active faults that traverse the province of Davao del Norte are Eastern Mindanao Fault, the Central Mindanao Fault and Davao River Fault. Eastern Mindanao Fault or the Mati Fault which emanates from the province of Davao Oriental passes through Compostela Valley and the province of Davao del Norte. It crosses through the municipalities of New Corella and Asuncion. The Central Mindanao Fault Line on the other hand, negotiates from the Davao Gulf and passes through the City of Tagum all the way to the northwestern portion of the province (Fig. 13).

Figure 13: *Davao del Norte Fault Lines*



Source: PPDO, Davao del Norte

### Earthquake Occurrences

History of earthquake occurrences dates back as early as the 18th century. Data generated from PHILVOCS indicates that in the 20th century, Davao del Norte had experience earthquakes of different magnitude ranging from 4.6 to 6.5.

The strongest earthquake that the province had experience was in 1878 with magnitude of 6.5. The latest record was in February 2014 with a 2.5 magnitude. However, no data on the possible damage to lives and properties were obtained. The potential sources of these earthquakes are the three major fault lines that traverse the province namely: Davao River Fault, Eastern Mindanao Fault and the Central Mindanao Fault. Historical data on earthquake occurrence is presented in Table 19.



Figure 13: Historical Data on Earthquake Occurrence

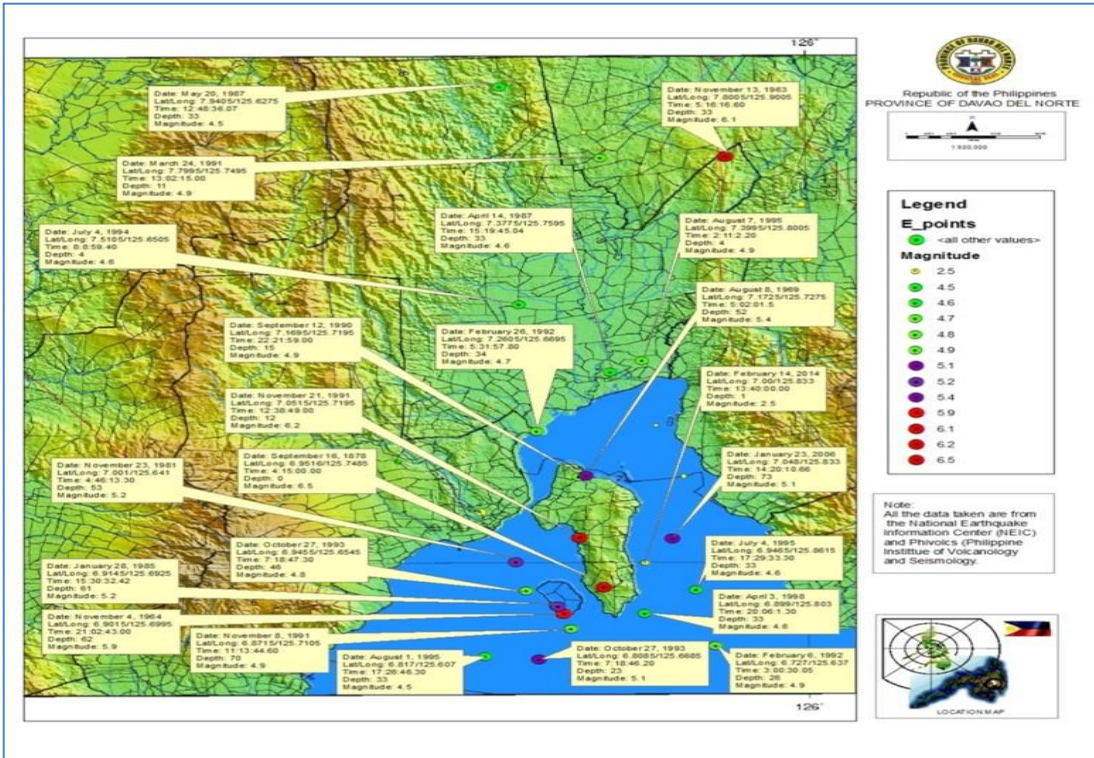


Table 19: Historical Data on Earthquake Occurrence

DATE	TIME	DEPTH	MAGNITUDE	EPICENTER
04/30/2016	7:34	017	2.4	Sto. Tomas
6/21/2013	12:52	032	2.1	Panabo City
2/14/2014	13:40:00	1	2.5	Babak, Island Garden City of Samal
2/21/2014	1:50	008	2.7	Tagum City
6/22/2014	16:23	074	3.1	Island Garden City of Samal
11/30/2014	24:23	016	3.8	New Corella
06/23/2015	08:02	001	2.8	Kapalong
07/31/2015	04:42	003	4.4	Kapalong
08/01/2015	23:37	005	3.5	Sto. Tomas
08/02/2015	01:31	003	3.2	Sto. Tomas
08/02/2015	01:42	005	3.4	Sto. Tomas
08/02/2015	08:52	003	3.7	Sto. Tomas
08/02/2015	14:39	006	3.5	Sto. Tomas
08/3/2015	02:29	006	3.7	Sto. Tomas
08/03/2015	02:57	013	3.4	Sto. Tomas
08/03/2015	15:41	018	3.6	Kapalong
08/03/2015	20:36	005	3.6	Sto. Tomas
08/6/2015	22:46	004	3.0	Kapalong
09/29/2015	12:38	013	2.5	Kapalong
10/11/2015	03:27	005	2.1	Sto. Tomas
11/05/2015	02:11	033	2.4	Carmen
11/15/2015	18:33	001	3.5	Sto. Tomas
11/23/2015	17:47	031	3.7	Island Garden City of Samal
03/15/2016	7:59	023	2.9	New Corella
04/11/2016	04:28	034	2.1	New Corella
04/30/2016	06:18	004	2.4	Sto. Tomas
07/18/2016	10:27	031	2.0	Island Garden City of Samal
08/24/2016	01:11	034	2.8	Island Garden City of Samal
08/28/2016	03:03	029	2.7	Carmen
09/05/2016	22:37	005	3.2	Panabo City
09/12/2016	22:46	014	2.6	New Corella
09/21/2016	18:55	029	2.5	Island Garden City of Samal
10/23/2016	18:24	001	2.4	Kapalong
11/05/2016	21:20	005	2.1	Sto. Tomas
11/12/2016	1:35	011	1.8	Island Garden City of Samal
11/14/2016	18:29	010	2.3	Panabo City
1/15/2017	17:42	003	2.6	Asuncion
1/16/2017	5:40	018	2.3	Kapalong
1/26/2017	1900	023	2.2	Kapalong
2/9/2017	2:30	006	2.5	Panabo City
9/13/2017	8:05	001	2.6	Island Garden City of Samal
10/29/2017	17:27	035	3.5	Sto. Tomas
12/28/2017	23:08	023	2.8	Island Garden City of Samal
10/16/2019	19:37		6.3	Tulunán, North Cotabato
10/29/2019			6.6	Tulunán, North Cotabato
10/31/2019			6.5	Tulunán, North Cotabato
12/15/2019			6.9	Matanao, Davao del Sur

## Ground Shaking

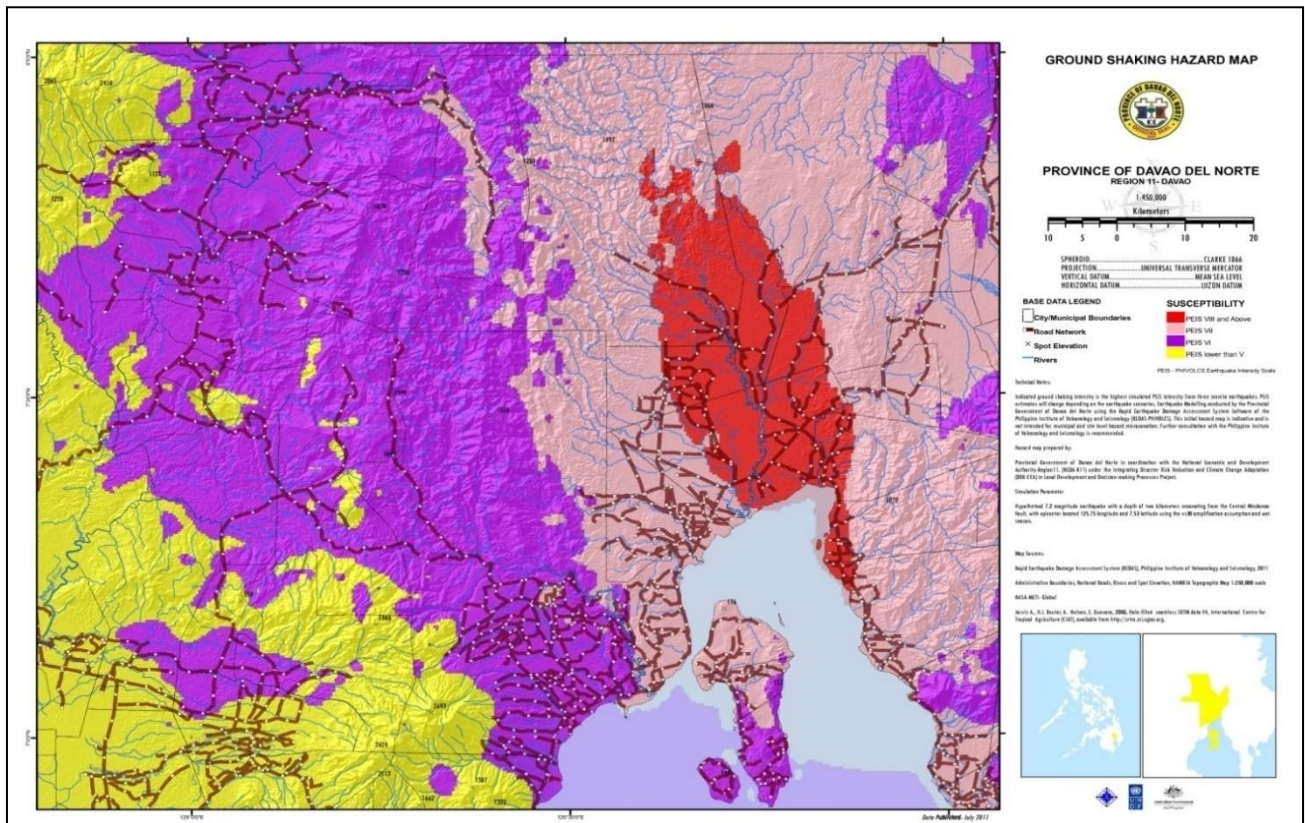
Using the simulation parameters located at the Central Mindanao Fault with a magnitude of 7.2 with a depth of 2 km., with epicenter located at 125.75 longitude and 7.53° latitude using the site amplification assumption and wet season, ground shaking data/map is generated. The process generated information on areas that are prone to ground shaking as presented in Table 20.

Table 20. Areas Prone to Ground Shaking by Municipality  
Davao del Norte

City/Municipality	Area in sq. kilometers
Asuncion	158.544
B.E. Dujali	52.114
Carmen	64.097
Kapalong	293.651
New Corella	90.752
San Isidro	109.478
Sto. Tomas	103.308
Talaingod	260.103
IGaCoS	124.965
Panabo City	0
Tagum City	183.466

Source: PPDO, Davao del Norte

Figure 14: Ground Shaking Hazard Map



Source: PPDO, Davao del Norte



Total agricultural area exposed to ground shaking is 144,082 hectares which accounts 95 per cent of the total agricultural area.

*Table 21: Agricultural area exposed to ground shaking, Davao del Norte*

City/Municipality	Total Agricultural Area (Has.)	Exposed Agricultural Area (has.)	Exposure percentage
Asuncion	18,058.09	11,423.76	63%
BE Dujali	8,584.169	5,062.01	59%
Carmen	14,775.6	6,408.65	43%
IGaCoS	25,598.35	11,653.81	45%
Kapalong	14,937.3	13,741.42	91%
New Corella	9,616.434	7,785.96	80%
Panabo City	16,138.56	0	
San Isidro	12,474.51	9,766.02	78%
Sto. Tomas	16,002.6	10,071.39	62%
Tagum City	10,358.97	10,186.76	98%
Talaingod	4,315.339	376.41	08%
TOTAL	150,836	144,082.58	95.52%

Source: PPDO, Davao del Norte

In terms of the exposure of the built-up areas to ground shaking, Tagum City has the highest land area followed by Asuncion and New Corella.

*Table 22: Built-up area exposed to ground shaking, Davao del Norte*

City/Municipality	Built-Up area exposed to ground shaking
Asuncion	390.295803
B.E Dujali	149.412009
Carmen	1.025025
Island Garden City of Samal	257.015983
Kapalong	787.8634
New Corella	342.559947
Panabo City	0
San Isidro	135.027466
Sto. Tomas	259.433256
Tagum City	5945.159469
Talaingod	99.884298

Source: PPDO, Davao del Norte

### Earthquake- Induced Landslides

Incident of earthquake-induced landslide in Davao del Norte happened at Mambing, New Corella which destroyed thirty-three (33) houses.

Using GIS and the available data from PHILVOCS, the simulation conducted indicate that the municipality of Kapalong has the widest area of 320.1038 square kilometers with high exceedance to earthquake-induced landslide. Other localities that are prone to earthquake-induced landslide are Talaingod, San Isidro and New Corella.

Table 22 below shows the areas in Davao del Norte that are susceptible to earthquake-induced landslides.

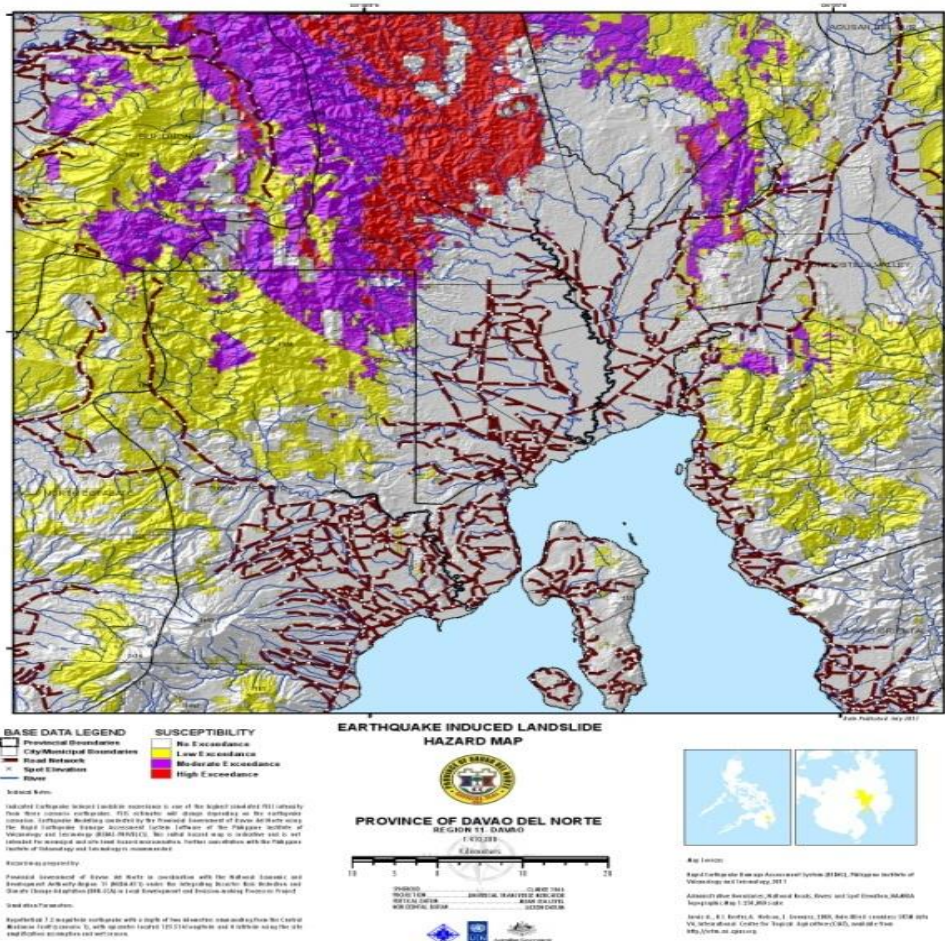
Table 22. Earthquake-Induced Landslide Susceptibility, Province of Davao del Norte

City/Municipality	Exceedance (in sq. km.)				Total
	No	Low	Moderate	High	
Asuncion				2.4913	2.4913
Kapalong			194.3461	320.1038	514.4499
New Corella				22.6721	22.6721
San Isidro				52.9188	52.9188
Talaingod			206.0218	192.9790	399.0008
Island Garden City of Samal		14.5199			14.5199
<b>Davao del Norte</b>		<b>14.5199</b>	<b>400.3679</b>	<b>591.1650</b>	<b>1,006.0528</b>

Source: GIS generated, PPDO, Davao del Norte

Out of 3,462.80 square kilometers total land area of Davao del Norte 1,006.0528 square kilometers or 29 % are susceptible to earthquake-induced landslide most of these areas are located in the Municipalities of Kapalong and Talaingod.

Figure 15: Earthquake –Induced Landslide Map



Source: PPDO, Davao del Norte

A total of 6,434 hectares agricultural land areas are considered with high exceedance to earthquake induced landslides.

Table 23: Agricultural area exposed to earthquake –induced landslides, Davao del Norte

City/ Municipality	Total Municipal Agricultural Area	Exposed Agricultural Area within HSA	Exposed Agricultural Area within MSA	Exposed Agricultural Area within LSA
Asuncion	18,058.09	246.08		
BE Dujali	8,584.169			
Carmen	14,775.6			
IGaCoS	25,598.35			1,371.31
Kapalong	14,937.3	872.65		
New Corella	9,616.434	539.49		
Panabo City	16,138.56			
San Isidro	12,474.51	3,316.63		
Sto. Tomas	16,002.6			
Tagum City	10,358.97			
Talaingod	4,315.339	1,460.67		
<b>TOTAL</b>	<b>150,836</b>	<b>6,434.54</b>	-	<b>1,371.31</b>

Source: PPDO, Davao del Norte

## Liquefaction

The municipality of Kapalong and San Isidro have the largest area with high susceptibility with 289.00 square kilometers. The other municipalities have either low or moderate susceptibility. The municipality of Carmen and Island Garden City of Samal have no areas susceptible to liquefaction. Detail of liquefaction hazard susceptibility is presented in Table 24.

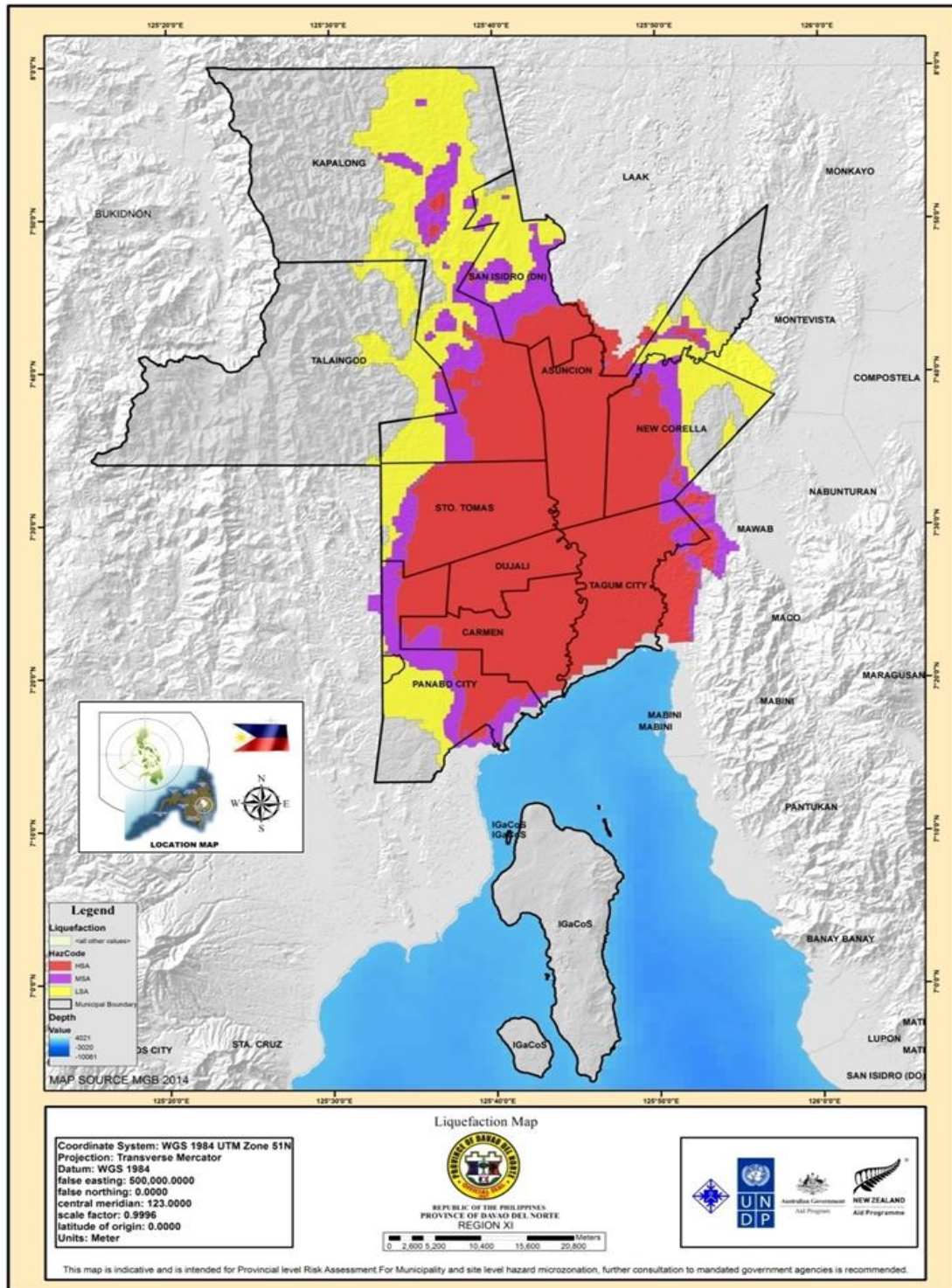
Table 24. Liquefaction Hazard Susceptibility, By Municipality  
Davao del Norte

Municipality	Exceedance				Total Low (sq.km)
	No (sq.km)	Low (sq.km)	Moderate (sq.km)	High (sq.km)	
Asuncion	283.47	0	0	10.000	293.47
B.E. Dujali	80.00	11.000	0	0	91.00
Carmen	166.25	0	0	0	166.25
Kapalong/San Isidro	608.35	106.000	95.000	289.000	1,098.35
New Corella	291.28	0	0	30.000	321.28
Sto. Tomas	216.41	73.000	30.000	1.000	320.41
Talaingod	340.76	72.000	41.000	1.000	454.76
Island Garden City of Samal	280.71	0	0	0	280.71
Panabo City	142.83	99.000	1.000	11.000	253.63
Tagum City	154.54	0	8.000	0	182.54
<b>Total</b>	<b>2,584.80</b>	<b>361.00</b>	<b>175.00</b>	<b>342.00</b>	<b>3,462.80</b>

Source: GIS Generated, PPDO, Davao del Norte



Figure 16: Liquefaction Hazard Map



Source: PPDO, Davao del Norte

Total agricultural area exposed to liquefaction was calculated at 87,736 hectares representing 58 percent cent of the total agricultural area.

Table 25: Agricultural area exposed to liquefaction, Davao del Norte

LGUs	Agricultural Area (has)	Agricultural area Exposed within Highly Susceptible Area	Agri. area Exposed within Moderate Susceptible Area	Agricultural area Exposed within Low Susceptible Area
Asuncion	18,058.085	11,662.525	835.362	1,884.575
B.E. Dujali	8,584.169	8,584.169	0.000	0.000
Carmen	14,775.599	13,682.772	840.630	74.267
Kapalong	14,937.300	10,406.163	3,478.073	1,053.075
New Corella	9,616.434	8,743.862	653.877	218.694
Panabo	16,138.558	5,671.184	3,092.311	3,934.137
San Isidro	12,474.508	3,988.290	4,739.336	3,746.882
Sto. Tomas	16,002.603	15,475.109	527.494	26.542
Tagum	10,358.966	9,456.736	124.930	0.000
Talaingod	4,315.339	66.029	576.954	2,130.994
Davao del Norte	150,836	87,736.839	14,868.967	13,069.166

Source: PPDO, Davao del Norte

Built-up areas exposed to liquefaction with high susceptibility was calculated at 20,000 hectares or 85 per cent of the total built-up areas.

Table 26: Built-up Areas Exposed to Liquefaction, Davao del Norte

City/ Municipality	Built-Up area	Exposed Built-Up Area in High Susceptible Areas	Exposed Built-Up Area in Moderate Susceptible Areas	Exposed Built-Up Area in Low Susceptible Areas
Asuncion	645.651	645.651	0.000	0.000
B.E. Dujali	637.763	637.763	0.000	0.000
Carmen	1,614.959	1,614.959	0.000	0.000
Island Garden City of Samal	1,962.900	0.000	0.000	0.000
Kapalong	1,415.366	1,402.906	0.000	0.000
New Corella	635.920	635.920	0.000	0.000
Panabo	4,910.647	3,374.509	1,270.383	17.576
San Isidro	401.793	0.000	308.234	93.558
Sto. Tomas	2,907.969	2,907.969	0.000	0.000
Tagum	7,202.459	7,167.441	35.018	0.000
Talaingod	299.879	0.000	170.772	129.108
Davao del Norte	23,273.068	20,002.075	1,784.407	240.243

Source: PPDO, Davao del Norte

## Storm Surge

There are no reported storm surge occurrences in Davao del Norte. However, to determine the effect of the storm surge and the extent of flooding if so ever it occurs in the province, a simulation using the worst case scenario (5 meter surge) is done through GIS. If storm surge will happen it will affect the cities of IGACOS, Panabo, Tagum and municipality of Carmen. All in all, 43 barangays will be affected, mostly in IGACOS. The result of the simulation is presented in Table 27 from DOST PAGASA.

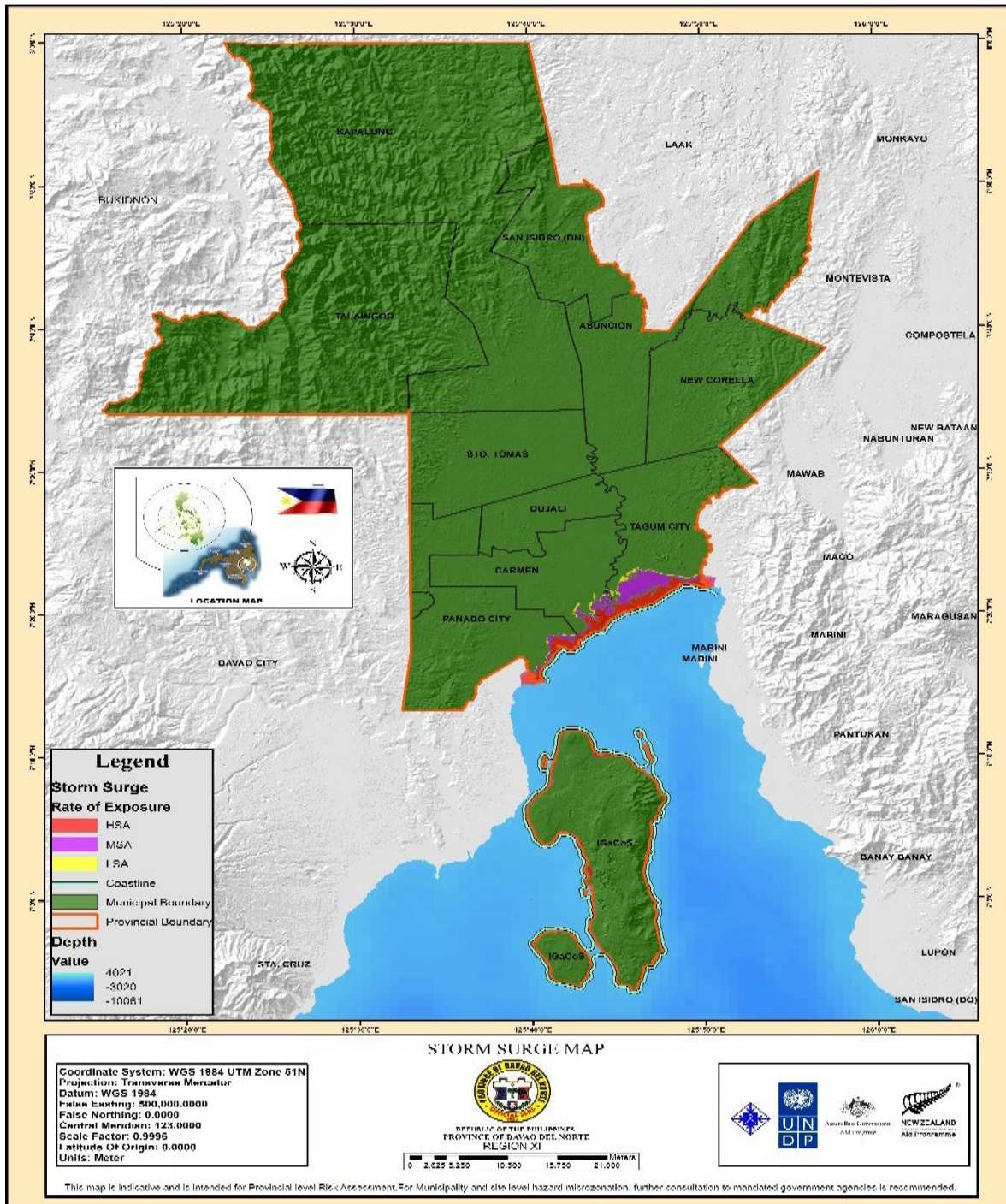


**Table 27: Storm Surge Susceptibility Area**  
Province of Davao del Norte

City/Municipality	Barangay	Susceptibility Level		
		HIGH (in has.)	MODERATE (in has.)	LOW (in has.)
Carmen	Lapaz	234.662	76.126	68.387
	Taba	452.188	344.722	71.327
	Tuganay	57.341	256.947	97.699
	Guadalupe		14.579	40.189
	Ising		30.55	37.502
	Sto. Nino		6.843	21.436
<i>Total</i>		<i>744.191</i>	<i>729.767</i>	<i>336.54</i>
IGACOS	Adecor	106.814	8.066	2.64
	Audanao	0.215	0.127	0.08
	Balet	37.901	3.731	1.255
	Caliclic	30.531	6.879	1.717
	Camudmud	28.691	4.611	1.869
	Catagman	6.895	2.158	1.349
	Cawag	9.351	0.32	0.04
	Cogon	20.926	2.087	0.92
	Dadatan	9.903	1.401	0.492
	Kinawitnon	12.246	3.441	1.629
	Libertad	13.393	1.994	0.84
	Libuak	60.905	6.413	3.065
	Limao	29.776	5.955	1.762
	Linusutan	12.148	1.685	0.6
	Miranda	24.611	9.024	2.928
	Moncado	36.212	6.075	1.09
	Penaplata	61.701	5.607	1.52
	Poblacion	31.655	4.555	1.273
	San Isidro	14.052	1.685	0.686
	San Jose	28.47	2.28	0.623
San Remegio	12.77	1.866	0.44	
Sta. Cruz	9.197	0.906	0.28	
Tambo	27.92	3.605	1.339	
<i>Total</i>		<i>626.283</i>	<i>84.471</i>	<i>28.437</i>
Tagum City	Bincungan	467.714	339.885	73.928
	Busaon	739.261	156.332	26.747
	Libuganon	383.137	88.273	0.091
	Madaum	1,005.257	202.527	74.279
	San Isidro	254.682	194.774	81.398
	Canocotan		0.955	6.593
<i>Total</i>		<i>2,850.05</i>	<i>981.791</i>	<i>256.443</i>

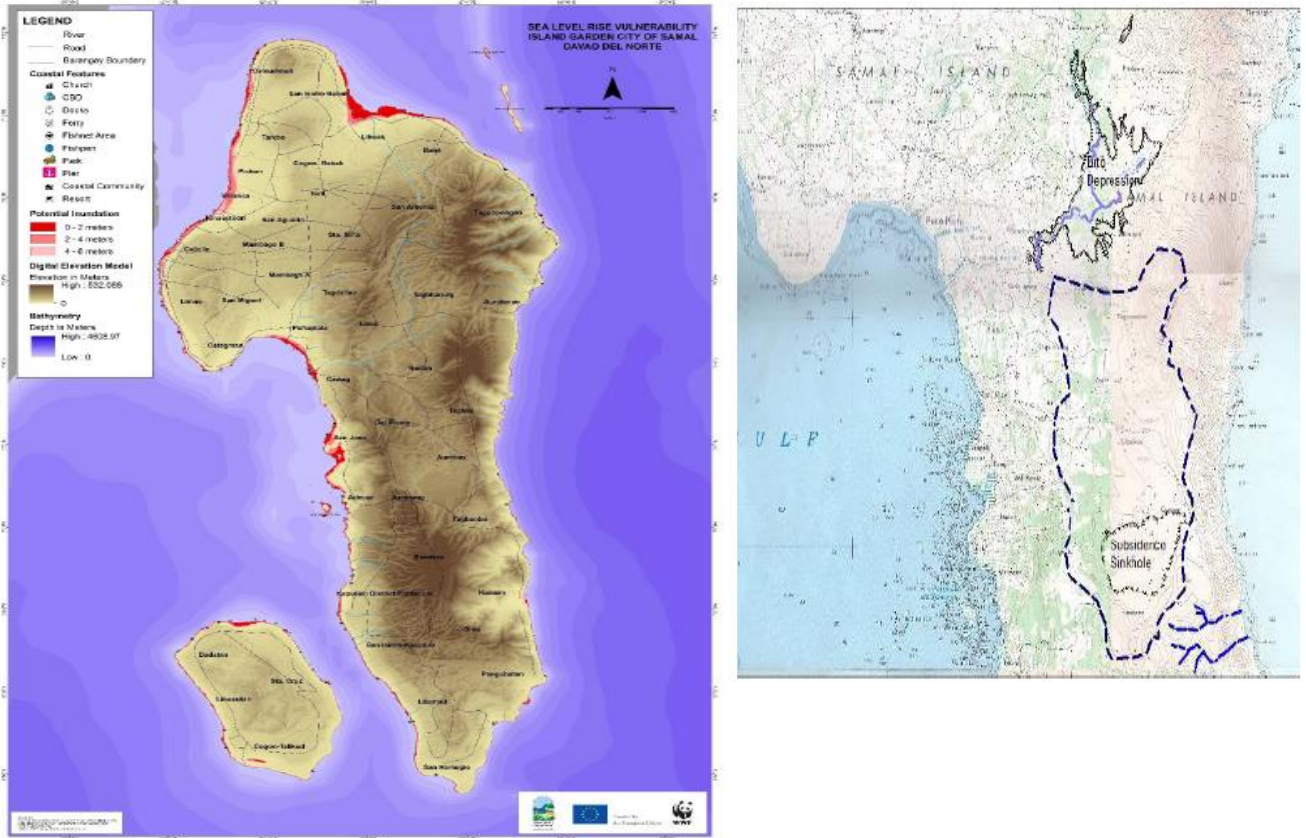
<b>Panabo City</b>	Cagangohan	111.66		
	Gredu		1.249	1.304
	J.P. Laurel	316.965	73.103	27.753
	New Pandan	55.884	42.724	9.162
	San Francisco	7.171	36.127	21.459
	San Pedro	308.06	25.664	6.482
	San Vicente	140.667	18.635	9.741
	Sto. Nino	180.556	38.582	15.168
<b>Total</b>		<b>1120.963</b>	<b>236.084</b>	<b>91.069</b>

Figure 17. Storm Surge Map, Davao del Norte



The Island Garden City of Samal is also vulnerable to sea level rise and coastal erosion being an island. Moreover, it has remarkable depressed areas and has limited recharge capacities so that it is vulnerable to dry spell and drought.

Figure 18: Map showing vulnerability of Samal to sea level rise and drought



**SUMMARY**

Table 28 shows the summary of hazards that may affect each municipality / city in the Province. Municipalities within specified districts usually experience similar hazards because of shared geographical and physical characteristics. For instance, all municipalities in the first district are prone to earthquake induced landslides though these municipalities are not the only ones experiencing ground shaking. Moreover, though all municipalities except for Talaingod and Island Garden City of Samal are susceptible to flooding due to rainfall, only Kapitalong, Talaingod, Asuncion, San Isidro, New Corella and Santo Tomas are high susceptible to rainfall induced landslides.

Table 28: Summary of Hazard that may affect the Province of Davao del Norte

City/Municipality	Flooding	Rain-Induced Landslides	Earthquake Ground Shaking	Earthquake-Induced Landslides	Earthquake-Soil Liquefaction
<b>District I</b>					
Asuncion	√	√	√	√	√
Kapalong	√	√	√	√	√



New Corella	√	√	√	√	√
San Isidro	√	√	√	√	√
Tagum City	√		√		
Talaingod		√	√	√	√
<b>District II</b>					
B.E. Dujali	√		√		
Carmen	√		√		
IGaCoS			/		
Panabo City	√				√
Sto. Tomas	√	√	√		√

Table 29: Historical Data on Hazard/Disaster Impacts on Areas and Population (Vulnerability Assessment)

DD/ YEAR	HAZARD	HAZARD EVENTS & DESCRIPTION	AFFECTED LGU'S	AFFECTED BRGYS	OTHER EFFECTS:		
					AFFECTED INDIVIDUALS	AFFECTED FAMILIES	DAMAGES TO AGRICULTURAL INFRASTRUCTURE, FAMILIES FORESTRY, POLITICAL, SOCIAL, COASTAL/MARINE HABITATS (INDICATE COST IF AVAILABLE)
March 16, 2020	Coronavirus Disease 2019	Declaration of State of Calamity throughout the Philippines Proclamation No. 929	11 LGUs		Still in progress	No affected families recorded	
December 15, 2019	Earthquake	Magnitude 6.9 Matanao, Davao del Sur	11 LGUs			No affected families recorded	No Major damages. Only minor to medium cracks were recorded in various schools and government facilities
November 18, 2019	Earthquake	Magnitude 5.9 Kadingilan, Bukidnon	11 LGUs			No affected families recorded	No Major damages. Only minor to medium cracks were recorded in various schools and government facilities
October 31, 2019	Earthquake	Magnitude 6.5 Tulunán, North Cotabato	11 LGUs			No affected families recorded	No Major damages. Only minor to medium cracks were recorded in various schools and government facilities

October 29, 2019	Earthquake	Magnitude 6.6 Tulan, North Cotabato	11 LGUs			No affected families recorded	No Major damages. Only minor to medium cracks were recorded in various schools and government facilities
January 26, 2019	Tail –end of a Cold Front	Flooding	Asuncion Sto. Tomas Carmen Kapalong Braulio E. Dujali New Corella, Tagum City			47,960	Agriculture worth P302,633,620.55; Livestock and Poultry worth P5,463,520.00; and Infrastructure worth P18,787,000.00;
January 11-13, 2019	Trough of Low Pressure Area	Flooding	Asuncion Kapalong New Corella Carmen Tagum City		61,305 6,245 350 530 425	12,261 1,249 70 106 85	Agriculture – 730,621.65 Infrastructure – 22,594,310
December 21, 2017	Tropical Storm Vinta	Flooding	Talaingod Kapalong Asuncion New Corella B.E. Dujali Carmen Tagum City San Isidro Sto. Tomas		108 27,904 77,130 15,370 21,275 84,125 25,040 1,180 69,010	27 8,039 15,426 3,080 4,255 16,825 6,260 236 12,061	Agriculture and Livelihood – P194,696,910.23
January 18, 2017	Tail-end of Cold Front	Flooding	Kapalong Asuncion New Corella, B.E. Dujali, Tagum City, Carmen;			21, 245	Agriculture- P8, 411, 024.00 Fisheries - P4, 414, 666 Livestock- P10, 822, 372.00 Infrastructure P285, 672, 500.00
January to May 2016	Effect of El Niño Phenomenon	Long Dry Spell	11 Local Government Units		228,976	57,244	Agriculture – PhP 883,510,587.14
18 December	Onyok	Tropical Depression					
22 September 2015	Landslide	Continuous heavy rains secondary localized thunderstorms for 3 hours	Talaingod	Lower and Upper Mesolong , Sto. Niño	1,025	205	Totally damaged – 3 houses
3 February 2015	Measles Outbreak		Kapalong	Gupitan		1,478	
7 January 2015	Tropical Storm Seniang	Tail-end of Cold Front	Asuncion	13	22,275	4,455	Wooden bridge totally damaged by flood
			New Corella	10	425	85	Rice – 915,146.41
			Tagum City	1	105	32	
Jan. 9-25, 2014	LPA/ Typhoon	TD Agaton Torrential Rains River Flooding  Landslide	Asuncion New Corella Kapalong  Tagum City Carmen B.E.Dujali Sto.Tomas	17 8 14  6 10 4 4	22,960 3,220 4,940  1,987 1,040 5,415 4,175	4,592 644 1,320  614 208 1083 873	Agriculture : P 144, 697, 434.00  Infrastructure: P 39, 503, 520.00
		TOTAL	7 LGU's	63	43,737	9,334	



Feb. 19-21, 2014	Typhoon	CRISING (Torrential Rains) River Flooding	Kapalong	13	29,796	9125	Agriculture : P 128, 065,014.25  Infrastructure: P 14, 470,000.00
			Asuncion Carmen	20	55,075	11,508	
				8	21,045	4,209	
			B.E.Dujali	4	12,200	2,440	
			Sto.Tomas	3	7,400	1,480	
		TOTAL	5 LGU's	48	62,475	13,045.00	
		Landslide	New Corella	1	780	156	
			Tagum City	7	18650	3730	
		TOTAL	2 LGU's	8	19,430.00	3,886.00	
April 17, 2014	Localized Thunderstorm	Torrential Rains with gustiness Urban Flooding	Tagum City	10	324 evacuated individuals	69	No damaged reported
June 20, 2014	Localized Thunderstorm	Heavy Rains Landslide	Tagum City	1	4	1	1 - Totally damaged residential Crops: 15 - coco trees, 8 durians, 1 - joey oak, 1 jack fruit, blocked road way
June 24, 2014	Localized Freak Tornado	Strong Winds	B.E. Dujali	1	54	12	Damaged Houses: P 195, 000.00 Totally : 5 Partially: 8
July 1, 2014	Localized Thunderstorm	Dike failure flooding	Carmen	3	1,155	231	Agriculture: 93 Has.
July 28, 2014	Armed - conflict	Social Unrest	Kapalong	1	9,474	1,595	Number of Casualties 3- Dead Male 10-male injured, 3-Male missing
January 18-23, 2013	TAIL-END OF COLD FRONT	Torrential Rains River Flooding	Kapalong	14	43,886.00	12613	Agriculture : P 400, 241, 718.06  Infrastructure: P 85, 760, 000.00
			Carmen	15	81,500.00	16300	
			B.E. Dujali	5	22,275.00	4,455	
			Sto. Tomas	10	24,491.00	5163	
			Asuncion	13	31,130.00	6226	
			New Corella	12	26,675.00	5335	
			Tagum City	11	37,230.00	7446	
		TOTAL	7 LGU's	80	267,187.00	57,538.00	

Source: PADO-DRRMD

### Vulnerability and Risk Assessment

Underlying factors causing floods in the province include overflows of the river /waterways systems, failures of dike, heavy rains, rapid scouring of river banks, realignment of the river system, meandering river system, and heavily silted rivers and waterways because of surface run-offs which decreases its carrying capacity. Based on the result of the river tracking conducted in the major rivers of the province, river re-alignments have been observed in the various sections of the river systems.

Figure No 19: River-realignment of Libuganon River (2013)



Degraded environment / denuded upland areas and rapid urbanization also contributed to the flooding problem of the area. Improper solid waste management resulted to clogging of drainage. Agricultural wastes also hamper the river system and its infrastructure.

Among the conditions contributing to the vulnerability of the province to disasters include the vast low-lying areas, settlements along riverbanks, houses made of light materials, poverty incidence and infrastructure facilities near riverbanks.

### **Capacity Assessment**

Capacities of the Provincial Government of Davao del Norte and the component Local Government Units have been assessed by identifying its strengths, weaknesses, opportunities and Challenges. The assessment process was based on the four (4) thematic areas as identified in the National and Regional Framework.

Excellent DRRM capacities of the province is highly manifested through the Gawad Kalasag Award it has received for five consecutive years.

## **D. SITUATIONAL ANALYSIS: IDENTIFYING THE STRENGTH, WEAKNESSES, OPPORTUNITIES AND CHALLENGES (SWOC)**

### **STRENGTH AND OPPORTUNITIES OF THEMATIC AREAS**

#### **Disaster Prevention and Mitigation**

The Local Disaster Risk Reduction and Management Councils are established in all levels including the Local Disaster Risk Reduction and Management Offices (LDRRMO). In most cases LDRRMOs are attached to existing LGU Offices particularly under the Local Chief Executives. Most of the LDRRMO Officers are designated only and handling two (2) or more positions. Most of the LDRRMO staff are having Job Order status of employment and others are detailed from other offices.

In the Provincial Level the Disaster Risk Reduction and Management Division was established in 2011 under the Office of the Provincial Governor and was transferred later in 2016 under the Provincial Administrator Office. Since then several plantilla positions were funded with 3 LDRRMOs.

CCA and DRR has been integrated in the Provincial Development Physical Framework Plan of Davao del Norte. With the assistance of the Mines and Geo-sciences Bureau and PHIVOLCS, hazard maps are already available however it needs further enhancement to integrate the structures at risks and vulnerable.

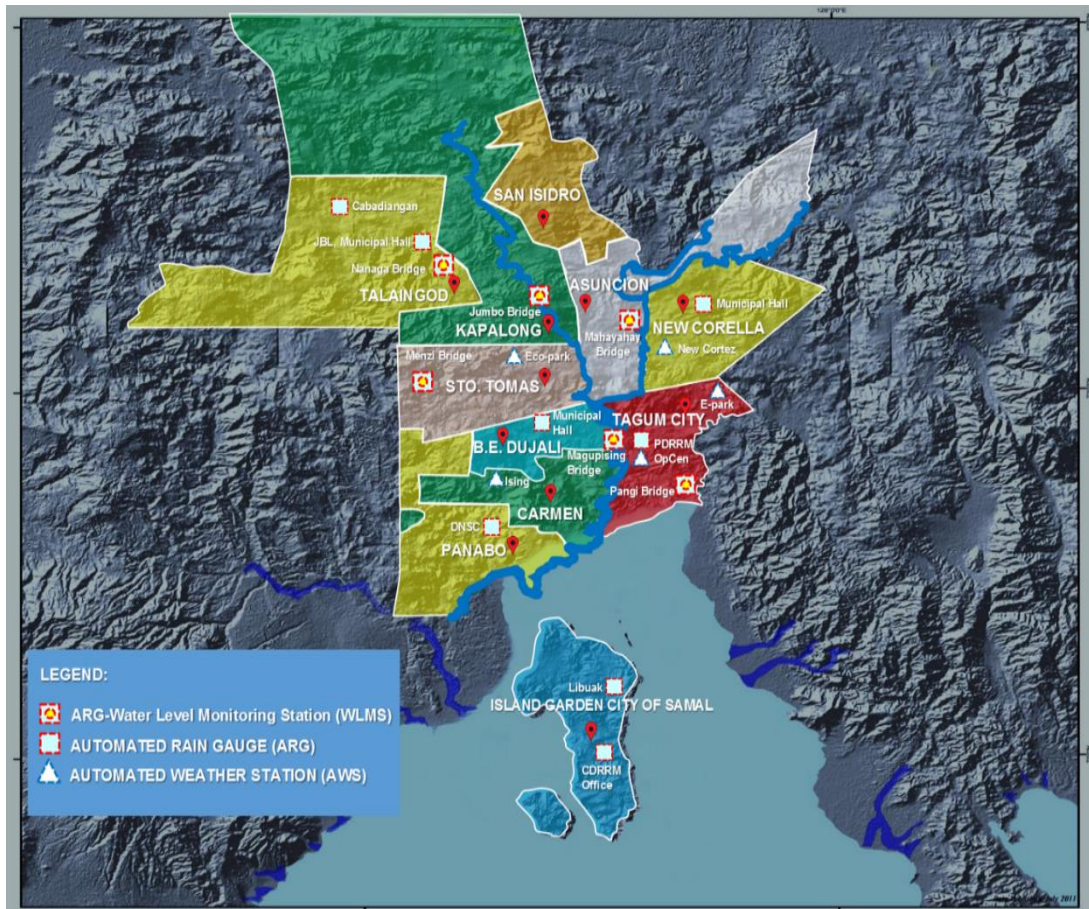
Effect of climate change in the environment is experienced in the province. As such, the Provincial Ordinance providing for Environment Code of Davao del Norte was enacted. Reinforcing the Environment Code is the Local Climate Change Action Plan. The plan enabled the Provincial Environment and Natural Resources Office to account the carbon foot print of the vital offices in the Province, particularly the release of greenhouse gas (GHG) through the consumption of fuel and energy. Presently they are cascading the GHG inventory in the Local Government Units of Carmen and New Corella.

Access to and effective crop insurance system has been afforded to provide protection to the agricultural rice producers through the Philippine Crop Insurance Program. More so, seed subsidies, natural farming and climate change technologies are already introduced for food security measures through the DavNor KAAGAPAY o KAwsa sa AGrikultura ug Panginabuhian sa barangay. The said Program also aim for communities to have a sustainable supply of food in this time of pandemic.

Enhancement of the river system has been a priority undertaking with the OPLAN Canal flood-mitigation program and road rehabilitation and improvement. Moreover, undertakings for river bank protection has been made through planting of vetiver grasses, malibago trees and other tree species.

Early warning systems are already in place. Automatic Weather Station (AWS), Automatic Rain Gauge (ARG) and Water Level Monitoring System (WLMS), Landslide Monitoring and Early Warning instruments are installed in strategic areas. With the establishment of PAG-ASA of the Tagum-Libuganon Flood Forecasting and Warning Center within the Provincial Government Center will contribute to a more precise early warning system of the province. However, system in disseminating the early warning information should be put in place from the provincial level down to the barangay level for effective dissemination of information. Moreover, additional Early Warning Sensors should be installed in the downstream as the same sensors are now already fully installed in the upstream areas since most of flashfloods originate from upstream.

Figure No. 20: Early Warning Stations in Various Strategic Areas Davao del Norte as of September 2014





## Disaster Preparedness

The Disaster Preparedness Committee since the establishment of the PDRRMD in the year 2011 has reinforced its capacities to manage all human and natural induced hazards. It employed strategies which harnessed the resiliency of the constituents of the province.

LDRRM responders are duly organized, trained and equipped. The trainings conducted had inculcated in the Responders the commitment to serve. Capacity building and skills enhancement have been provided by various disaster management practitioners and institutions. However, a unified approach in responding management must be instituted to be more responsive to the needs of the communities considering gender sensitivity, cultures and beliefs. Moreover, a competency-based capacity building programs on CCA and DRRM should be developed and continually conducted. Rescue equipment and vehicles are also available but need augmentation.

The enactment of Provincial Ordinance No. 2014-004, establishing the Provincial Disaster Risk Reduction and Management Training Center is another milestone towards strengthening disaster preparedness in the province.

Incident Command System (ICS) and Damaged Assessment and Needs Analysis (DANA) Team are in place, however, roles and responsibilities need to be clarified and understood in the context of emergency situations and DRR. Meanwhile, reporting tools need to be enhanced. Protocol for Disaster Management gained full support from the Legislative Body, although, the Manual of Operation of the DRRM Operation Center and Contingency Plans already crafted but need for review given the recently acquired or installed DRRM facilities.

Prepositioning of resources has been made available, although, the existing storage area needs improvement in order to qualify the standard requirements.

To secure the responders at all times it provided insurance to cover any incidental and unforeseen events. To make sure that the programs and projects are properly implemented it allocated funds, trainers and facilities.

Partnering with other stakeholders has been established. However, linkages need further legislations and concrete arrangements. The organization of the Provincial Alliance of Disaster Risk Reduction and Management Officers (PADIRRMO) has made possible the unified approach paving the way for an effective and responsive disaster management, evident in One DavNor Rescue.

Community-based disaster risk reduction and management in Davao del Norte needs more focus. Although, DRR has been gaining attention, more resources and initiatives must be given to disaster risk assessments, vulnerability and hazard mapping and comprehensive DRRM planning at the barangay level.

The Provincial Evacuation Center/Area is already established to cater the needs of LGUs that don't have strategic locations for evacuation specially during flooding. Said facility is with toilet, kitchen and mess hall. Meanwhile, already existing evacuation centers should be

assessed according to the set standards of CCCM and MGB. Evacuation routes should be popularized in the community drills and evacuation alert systems.

Advocacy activities have been regularly conducted thru the quad media (radio, television, print and internet) as well as conduct of advocacy activities down to the household level through the issuance of Provincial Executive Order No. 19-2013 series of 2013 based on the provisions of Republic Act No. 9729 or the Climate Change Act of 2009 and Republic Act No. 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010 the conduct of Oplan A.N.D.A.M. or operation planning on Advocacy on Natural Disaster Awareness and Management have been ably undertaken. The sixty-four (64) frequently flooded barangays were prioritized in the OPLAN A.N.D.A.M 1 activities while the OPLAN A.N.D.A.M 2 activities focused on 12 coastal barangays that are vulnerable to storm surge and tsunami. The OPLAN A.N.D.A.M 3 activities centered on the organization of the local responders in the barangay level. Presently, the OPLAN TABANG or Tapok sa Barangay Alang sa Nanginahanglan ug Kabos equip the vulnerable sectors in the Barangay including the far flung areas on knowledge regarding disaster preparedness and provide grab kits ready for use when emergency or disaster occur.

Acknowledging the differential needs of men and women in times of disaster, initiatives to address gender issues in time of disasters were considered. Women are more concerned and responsible in providing water, preparing food and medicine for the family especially for the children and the elderly. The men, on the other hand, has to take care of providing food for the family as well as financial needs. Hence, men and women from the barangays are enjoined to learn the various preparedness technologies introduced such as Water and Sanitation and Hygiene or W.A.S.H. program wherein alternative ways of producing potable water during calamities are introduced; Botanical Concoction for natural farming; Riverbank Protection with Food for Work Component; Basic Life-saving Techniques; Evacuation drills; Spiritual and Moral Recovery Program and Knowledge Management on local hazards. Likewise, the differently abled members of the community were provided an inclusive training of the abovementioned programs. Trainings on Disaster Preparedness are integrated in the school activities to make the children resilient to risks. However, there is a need to a study on the needs of the Indigenous Peoples and Muslims with respect to their beliefs, culture and tradition so as to provide a more sensitive response in times of disaster.

With the occurrence of Coronavirus disease, the Province has established four isolation facilities and tied up with local hotels for augmentation in case of a massive spread. While in the facilities the patients are well provided ranging from food, toiletries, beddings, television and medical attendants to ensure their fast recovery. To ensure the safety of the Locally stranded individuals and returning overseas Filipino workers transport service were provided. QR Code system was also developed to ease contact tracing. These efforts were made possible through the availability of Local Disaster Risk Reduction and Management Fund and the Bayanihan Funds from the National Government.



## Disaster Response

In its commitment to provide emergency services and public assistance during or immediately after disaster to save lives the Disaster Response Thematic Committee is organizationally tangible through the Response Cluster Approach, equipped with both knowledge and skills, and ready to commit to be sent to a mission to conduct Rapid Damage Assessment and Needs Analysis (RDANA) during the early and critical state of disaster occurrence.

Meanwhile, the provincial government is blessed with good leadership and management giving the mandated Local Disaster Risk Reduction and Management Fund (LDRRMF) while a fair budget is being shared to the disaster response committee as much as other committees have equitably been supported. Thus, each committee in the four thematic areas have been sent to trainings and knowledge updating for learning and development like Pre-Disaster Risk Assessment (PDRA); Rapid Damage Assessment and Needs Analysis (RDANA). These trainings are very important in equipping for immediate responses. Also, the Post Disaster Assessment and Needs Analysis (PDANA) for fast and early recovery of those affected by disaster. These are essential components in enhancing the operationalization of the province' Emergency Operation Center (EOC) 24/7 and the PDRRMC. The organized Incident Command System, the production of PROTOCOL and Special Operating Procedures handbook which are most useful guide to Incident Management Team (IMT), the making of contingency plans for different hazards, the establishment of the cluster approach, the trainings of responders and institutionalization of their group dubbed as PADIRRMO, and ONE DAVNOR RESCUE were among the significant accomplishments of the province. Enshrined in the KUYA GOV development goals of the administration, people empowerment and building people through capacity and capability enhancement were among the salient features of the response cluster team.

The RDANA team activation is simultaneously upon activation of the ICS. RDANA report to the Emergency Operation Center serves as basis for timely appropriate response actions to save lives, reduce impacts of disaster, and hasten recovery. The interoperability of the Response Cluster, Emergency Operation Center and the Incident Management Team has systematized the response activities to prevent the spread of coronavirus disease.

The pillars of best disaster operation are effective coordination, good media relations and available baseline data. In turn, the Provincial Social Welfare and Development Office being the lead office in relief operations normally accessed to their stand-by prepositioned goods purchased under the 70% LDRRMF, spontaneously procure additional food packs and non-food supplies using the 30% quick response fund, and automatically access to DSWD XI for complementation when necessary. On the other hand, through the Provincial Information Office Davnor Karon TV series and media relations which disseminate warnings, alerts, and publish official reports have in turn invite donations from various groups in the locality like the cooperative sector, business groups, private companies, and other similar groups voluntarily sharing their corporate social responsibility to disaster victims.

On the other hand, the strengths and opportunities of the response team are being challenged by the full integration of climate change adaptation, and gender mainstreaming especially in making the response operation's handbook; creation of a comprehensive data base inclusive of baseline data, primary and secondary data for precise camp coordination

and camp management, and conscientious response to protection issues of all internally displaced persons (IDPs); identification and construction of a provincial evacuation center as stronghold shelter facility during large scale disaster are among the urgent call.

Furthermore, the response committee in coordination with the preparedness committee has to multiply their efforts in expanding coordination arrangements to the transport sector to mobilized their vehicles during onset of large scale disaster; the business sector to make available their food and non-food supplies for ration and relief distribution; the dormitory, hotels and private homes in an adopt a family scheme or share a home program to assist displaced families and more evacuees. All hospitals to openly take charge of disaster victims during large scale disaster, and all funeral parlors to humanely receive all those dead persons excavated during the search and rescue operations. More memorandum of understanding or memorandum of agreement have to be forged ahead to replicate the established MOA between the province and the National Food Authority for rice supply, and with Tagum Water District for domestic and potable water to evacuation centers and strategic areas as defined by local responders or officials in the locality.

After all, saving and sustaining lives while re-establishing essential services, and restoring emergency livelihoods is the goal of every disaster response. Section 3, Rule 4, IRR of RA 10121 mandates DRRMC chairperson to tap the facilities and resources of other government agencies and private sectors for the protection of life and properties in pursuit of disaster risk reduction and management. Also, Section 4, Rule 6 of same IRR order LDRRMCs to establish linkage and network with other LGUs for disaster risk reduction and emergency response purposes.

### **Rehabilitation and Recovery**

The identified strengths of the Rehabilitation & Recovery activities focus on boosting up the moral of the affected communities, restoring economic livelihood, preventing effectively the recurrence of disaster and harnessing conditions for future development. The Post Damage Assessment and Needs Analysis (PDANA) team are equipped with trainings in identifying the necessities for an effective rehabilitation and recovery. They provide vital information needed for decision making of the officials in the deployment of resources in the disaster-stricken area.

The 2015-2019 LDRRM Plan of the Provincial Government served as the guide that led to the acquisition of equipment like floating backhoe and river tracking data that contributed tangible impact. Community Based-Road Maintenance Contracting (CBRMC), a community development modality is encouraged to empower communities. Currently, there are 16 people's organization in the Province where actively involved in road maintenance for 300kms. This undertaking will enhance community's participation in order for them to have an ownership of the said road sections.

Another promising economic activity intervention is the sustainable contract growing scheme for poultry and livestock which may be introduced to the qualified disaster victims. Food and cash for work program were customarily provided to the victims in order to address their basic necessity to sustain their day to day family functions. As usual, the relief distribution and provision of medical and psycho-social services continue even after the return of the

evacuees to their residences, but there is no organize team yet in the Municipal level. Post DANA reports are very useful in the preparation of the Strategic Plan for Rehabilitation from works but there is still lack of standard validation tools particularly in the gender base analysis that are not yet utilize and reporting system in other agencies that may cause confusion particularly on the actual costing of damaged crops and livestock. The “Building back better” principle in restoration is being promoted however the funding support is very much limited that is why the restoration activity’s takes time. It is also a consideration that the structures are built on safe locations during reconstruction and rehabilitation that will follow the standard design parameters in order to have an upgraded Plans/designs that resist Climate Change. However, it is observed that there is a weak imposition of the “no build zone” policy among LGUs.

In order to achieve a better recovery effort, it requires building local capacities, restoring coping mechanism, empowering communities and determining root causes and vulnerabilities which make the communities disaster-prone. Therefore, the following are the recommendations to strengthen the effort of rebuilding communities:

- The creation of Provincial Psycho-social Team, which is composed of experts from different offices, and shall facilitate the ontime activation and administration of CISD to affected individuals and families.
- Establish a more coordinated livelihood programs for the eligible disaster victims. These services will allow individuals and families avail a sustainable recovery.

## **WEAKNESSES AND CHALLENGES OF THEMATIC AREAS**

### **PREVENTION AND MITIGATION**

- Not all LGUs have plantilla positions for LDRRMOs
- LDRRMO not yet an office in the province and some component LGUs
- Fast turn-over of trained responders particularly every after election
- Risks assessments and gathering of comprehensive disaster related database at community level should be enhanced
- Not all river banks have protection measures (dike, bamboo, vetiver grass, etc.)
- Crop insurance only cover rice, not all crops are covered with insurance
- Spread of African Swine Fever
- Panama disease infection in Banana plantations
- COVID 19 community transmission
- People’s aversion to the observance of minimum health protocols due to corruption in Philhealth (notion that COVID 19 is just an invented idea for profit gaining purposes of those who are in the position)
- Intensify widening of water outlets and canals to facilitate drainage of flood water every rainy season
- Basic Services such as health, education and infrastructure should be provided to far flung areas to regulate or eliminate local communist armed conflict

## PREPAREDNESS

- Tenurial Status of responders not secured and have no hazard pay as strikers in fetching Locally Stranded Individuals and returning Overseas Filipino Workers who are potentially carrier of the virus
- Lack of female responders
- A need for PDRRM Council members to undergo capacity building on (R/PDANA, ICS, PDRA, CBDRRM and etc)
- MOA/MOU with funeral homes, hotels, hospitals, LCEs, business sectors, transport, electric companies and etc.) for renewal
- Lack of Information and Education Campaign materials on COVID 19 and African Swine Fever

## RESPONSE

- Transport vehicle for the mobility of RDANA team is needed
- Additional water rationing truck to provide potable water
- Additional portable toilet needed
- Tools, Equipment, Accessories (TEA) need upgrading
- Limited trained personnel on Health in Emergency Management System
- Limited funds for assistance of COVID 19 infected individuals and those families with death due to the virus
- Stigma on families affected by the COVID 19

## REHABILITATION AND RECOVERY

- “no build zone areas” not properly imposed
- Slow recovery of the Swine Industry affected by the African Swine Fever
- Fast recovery of COVID 19 affected families, industries, livelihoods should be considered

## E. THEMATIC AREA PLAN

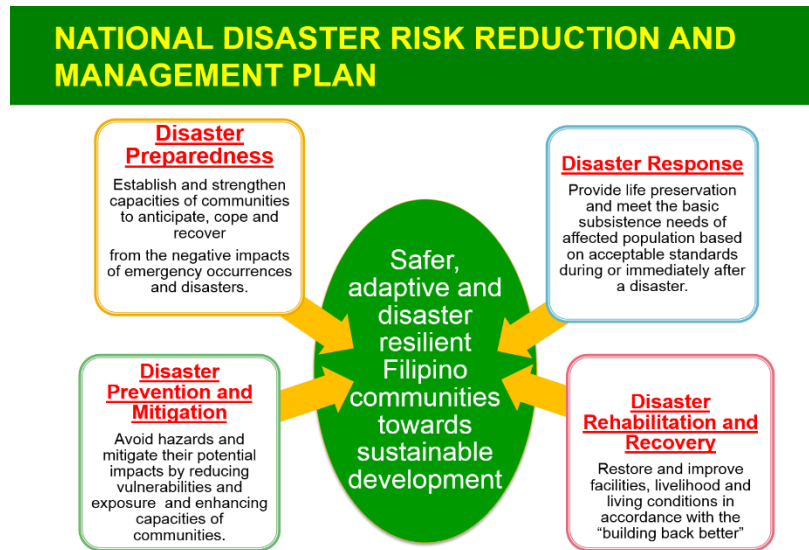
### Plan Framework

The Provincial Disaster Risk Reduction and Management (PDRRM) Plan of Davao del Norte upholds the four priority areas for actions enshrined in the SENDAI Framework for disaster risk reduction namely: Understanding disaster risks; Strengthening disaster risk governance to manage disaster risk; investing in disaster risk reduction for resilience; and Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction.

The plan is also anchored and closely aligned with the National NDRRM Plan and Regional Framework.

The Plan identifies four (4) distinct and mutually reinforcing thematic areas which aims for a safer, adaptive and disaster resilient Filipino communities towards sustainable development as illustrated in the Figure 21 below, to wit:

Figure 21: NDRRM Framework



The formulation of the 2020-2022 PDRRM Plan also directly takes off from the province’s existing development directions set in:

a) **The provincial vision and mission, to wit:**

**VISION**

**DAVAO DEL NORTE IS A LEADING, INNOVATIVE AND COMPETITIVE PROVINCE WITH EMPOWERED RESILIENT PEOPLE**

**MISSION**

**WE COMMIT OURSELVES TO UPLIFT THE QUALITY OF LIFE FOR ALL DABAONONS BY:**

- Championing excellence in governance and administration towards operational peace
- Providing globally competitive products and services with local market advantage
- Adopting science-based policies and technologies in environmental protection, climate-smart agriculture, disaster-risk management, infrastructure development and social needs
- Promoting international tourism while preserving and protecting the environment and cultural heritage
- Sustaining business-friendly environment for rural and urban development
- Developing skilled and certified workforce to participate in knowledge economy and global arena
- Strengthening people’s collaboration in all level of governance

Thus, ensuring sustainable inclusive development.



b) The 2014-2022 updated **Provincial Development Physical Framework Plan (PDPFP)**

c) The **Development Strategy on “KUYAGOB”** which articulates priority executive and legislative development measures, policies and strategies towards people empowerment.

**K**nowledge Management, Education and Sports

**U**niversal health and Social Services

**Y**ield growth agriculture and sustainable environment

**A**dequate infrastructure facilities

**G**reater livelihood and income opportunities

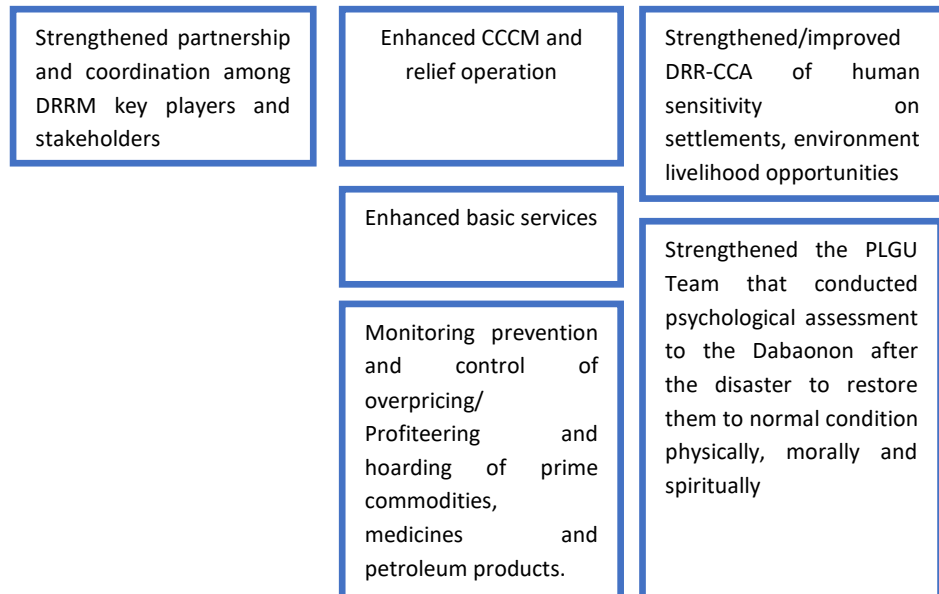
**O**peration peace and development framework

**B**road-based economic growth and investment

The Plan has specified the following provincial framework as follows:

**PROVINCIAL DRRM FRAMEWORK**

<b>GOAL</b>			
A safer, adaptive and disaster resilient communities in an improved environment quality.			
<b>PREVENTION AND MITIGATION</b>	<b>PREPAREDNESS</b>	<b>RESPONSE</b>	<b>REHABILITATION AND RECOVERY</b>
<b>OBJECTIVES</b>			
Minimized potential disaster impacts & decreased hazard risks.	Strengthened capacities of communities in anticipating, coping, & recovering from the negative impacts of emergency occurrences & disasters.	Preserved life and properties, met the basic subsistence needs, and restored the basic social services in the affected areas.	Fully Recovered communities and environment hit by disaster thru building back-better approach
<b>OUTCOMES</b>			
Minimized vulnerability and exposure of the population to all hazards	Increased the level of awareness, skills, & attitudes of the communities to manage with the effects of disaster	Enhanced measures and coordination	Enhanced System of doing post disaster needs assessment, planning, monitoring and evaluation
Enhanced capacities of the institution to reduce the risks from all hazards	Enhanced the DRRM & CCA capacity of the Brgys., Mun. & City Council members, offices & Operating Centers @ all levels and best practices appreciated	Efficient and gender sensitive search, rescue and retrieval operations	Upgraded DRR – CCA resilient infrastructure, agricultural, social facilities and utilities



**PROGRAMS, PROJECTS, ACTIVITIES**

**Thematic Area: PREVENTION AND MITIGATION**

<b>GOAL</b>	A safer, adaptive and disaster resilient communities in an improved environment quality				
<b>OBJECTIVES</b>	Minimized potential disaster impacts & decreased hazard risks.				
<b>OUTCOME 1</b>	Minimized vulnerability and exposure of the population to all hazards				
<b>PROGRAMS, PROJECTS AND ACTIVITIES</b>	<b>TARGETS</b>	<b>KEY OUTPUTS</b>	<b>RESPONSIBLE PERSON/AGENCY/OFFICE</b>	<b>TIMEFRAME</b>	<b>SOURCE OF FUNDS</b>
Formulation/Completion of environment related plans (FLUP/EMP/ CRMP)	FLUP/EMP/CRMP/LCCA P completed	2 Plans and 1 Code updated	PENRO	2021-2023	Knowledge Management Development Program
Restoration of forest cover in critical areas	Degraded Forestal areas Provincewide	Every year a total number of hectares planted, to wit:  9.45 hectares planted with 15,750 forest seedlings for protection purposes  213.7 hectares planted with 96,000 fruit/high value crops	PENRO	2021-2023	Disaster Prevention and Mitigation Program
Riverbank and mangrove rehabilitation	Disaster prone Provincial river banks	Every year a total number of hectares planted, to wit:	PENRO	2021-2023	Disaster Prevention and Mitigation Program

		12 hectares planted/12,000 forest seedlings 11.41 hectares planted/3,000 fruit seedlings			
	Disaster prone Provincial Coastal areas	Every year a total number of hectares planted, to wit:  Half hectare planted with 2,000 seedlings of mangrove trees	PENRO	2021-2023	Disaster Prevention and Mitigation Program
Conduct community based and scientific DRRM-CCA research, assessment, mapping, analysis and monitoring at Barangay Level on the impact of Climate Change	Rivers Saug, Libuganon, Tuganay, Kipaliko, Lasang and Kaputian	Research Document Activity Report	PHO/PENRO/PDRRMO/Academe/DOST	2021-2023	Disaster Prevention and Mitigation Program
Enhanced resilience of natural calamity in upland area and river banks through construction of protection dikes/slope protection	Linear meter dikes/slope in the flood prone areas  Adapting the latest modern technology	Certificate of Acceptance Project Report  Brochure Certificate of ISO standard	PEO	2021-2023	Disaster Prevention and Mitigation Program  Infrastructure Development Programs
De-siltation/Re-channeling of rivers	Flood prone areas of Saug and Liboganon River and irrigation canals	Certificate of Acceptance Activity Report  Documentation of Desilting activity	PEO	2021-2023	LDRRM FUND  Infrastructure Development Programs
Repair/Rehab of roads/drainage/cross drainage/bridges	1000 linear meter roads & drainage	Program of Work Project Completion Report	PEO	2021-2023	Infrastructure Development Program



		Accomplishment Report Certificate of Acceptance			
Construction of breakwater and seawall	Coastal areas Island Garden City of Samal, Panabo City, Carmen, Tagum City	Program of Work Project Completion Report Accomplishment Report Certificate of Acceptance	PEO	2021-2023	Infrastructure Development Programs
Enhanced disaster resilience of Infrastructures through conduct of Infra Audit	At least 2 Provincial Building Facility and 3 Bridges audited every year	Infra Audit Report	PEO	2021-2023	Infrastructure Development Programs
Retrofitting of infrastructure facilities	At least 2 Provincial Building Facility and 3 Bridges retrofitted every year	Retrofitting Activity Report Project Completion Report	PEO	2021-2023	Infrastructure Development Programs
Mobilize E/M/CESU in Local Government Units to prevent spread of COVID 19 and other epidemic diseases	11 Local Government Units	PESU Reports	PHO	2021-2023	Disease Prevention and Control Program
Disease Prevention Medical Outreach	11 Local Government Units	Individual Treatment Record and Report	PHO	2021-2023	Disease Prevention and Control Program
Conduct IEC on communicable and environmental related disease including COVID 19	11 Local Government Units	Terminal Report	PHO	2021-2023	Disease Prevention and Control Program

Provision of basic services to Armed Conflict Areas (ELCAC Area)	Local Government Units of Kapalong, Talaingod, San Isidro, Panabo City, Sto. Tomas, New Corella, Tagum City, Asuncion	Accomplishment Report	PSWDO, AFP	2021-2023	Peace and Order Program Fund
Provision of relocation site for families living in the high risk area	Landslide, flood Prone, Earthquake and Armed Conflict Areas	List of Recipient Land Title	PSWDO	2022	LDRRM FUND
<b>OUTCOME 2</b>	Enhanced capacities of the institution to reduce the risks from all hazards				
Mainstreamed DRR-CCA in Provincial and Local Plans	PDPFP AIP PDIP	Annual Investment Plan  Provincial Development Investment Plan	PPDO	2021-2023	PPDO General Admin Funds
Hazard Map enhancement	Flood, landslide, earthquake, liquefaction, storm surge/tsunami hazard map	6 Hazard Maps Enhanced	PPDO	2021-2023	PPDO General Admin Funds
Provision for additional LDRRMO plantilla positions	At least 3 personnel elevated to plantilla position	Office Order  Appointment	PGO	2021-2023	LDRRM FUND
Installation of Rain water harvesting at source in upland farms	Upland farms	Purchase Order  Procurement Receipt  Disbursement document	PAGRO	2021-2023	LDRRM FUND
Procurement and dispersal of Biocontrol Agent/Natural Botanical Concoction for Climate	Rice, corn and banana crops	Purchase Order	PAGRO	2021-2023	LDRRM FUND

Change Resiliency Project to ensure Food Security		Procurement Receipt Disbursement document			
IEC on El Nino and La Nina and effects of climate change to agriculture and fisheries	Farmers and Fisherfolks provincewide	Terminal Report Attendance Report	PAGRO, PDRRMD	2021-2023	Agri-Aquaculture Enhancement Program  LDRRM FUND
Provision of Open surface pump to rainfed rice production	11 LGUs who will be possibly adversely affected by El Niño	Procurement Receipt Accomplishment Report Project Completion Report	PAGRO	2021-2023	LDRRM FUND  Agri-Aquaculture Enhancement Program
Provision of open surface pump to inland fishery production area	Manay, Panabo City and areas that will be impacted with El Niño	Procurement Receipt Accomplishment Report Project Completion Report	PAGRO	2021-2023	Agri-Aquaculture Enhancement Program
Animal health care and disease mgt. program  Procurement of veterinary drugs and biologics and agri-supplies for African Swine Fever and other animal diseases	3 cities and 8 municipalities	List of Recipient	PVO	2021-2023	LDRRM FUND
Animal Disease Surveillance and Monitoring on African Swine Fever and other related diseases	7 priority diseases monitored and regulated 1. Hog Cholera 2. Swine Dysentery 3. New Castle's Disease 4. Chronic Respiratory	Activity Report  Surveillance and Monitoring Report	PVO	2021-2023	LDRRM FUND

	Disease 5. Liverfluke Disease 6. Rabies 7. African Swine Fever				
Access of communities to disaster risk financing, insuring rice farmers protection against losses resulting from natural calamities	955 hectares insured provincewide	List of Recipients	PAGRO	2021-2023	LDRRM FUND
Provision of insurance for animals, fisheries and other related industry affected by disease such as but not limited to African Swine Fever	100% of small scale animal and fish raisers provided with insurance	List of Recipients	PVO	2021-2023	LDRRM Fund
Established Health Emergency Management System	11 LGUS have organized and mobilized HEMs	Post Reports	PHO	2021-2023	LDRSSsM FUND
Provision of Anti-COVID 19 and other epidemic diseases vaccines	11 Local Government Units	Procurement Receipt	PHO	2021-2022	Disease Prevention and Control Program
Coordinate and assist vaccination activities for COVID 19 and other epidemic diseases with regional and national government agencies	11 Local Government Units	Minutes of the Meeting Terminal/Activity Report Attendance	PHO, DOH	2021-2022	Disease Prevention and Control Program
Established end-to-end monitoring system for forecasting and early warning	Communities living along Saug and Liboganon river	Water level advisory  Attendance to training  Terminal Report	PDRRMD	2021-2023	LDRRM FUND
Skills and capacity enhancement of personnel in monitoring and forecasting	9 Planning and Early Warning Personnel	Training Attendance  Training Certificate	PDRRMD	2021-2023	LDRRM FUND

		Terminal Report			
Installation of emergency sirens and other early warning instruments in the strategic parts of the province	Saug, Liboganon, Kasilak Bridge, Guadalupe, Strategic Coastal areas	Project Completion Report Accomplishment Report Memorandum of Understanding	PDRRMD	2021-2023	LDRRM FUND
Empowering LDRRM in local weather monitoring and forecasting	11 LDRRM personnel	Certificate of Completion	PDRRMD	2021-2023	LDRRM FUND
Institutionalization of existing early warning protocols to all LGUs in the province	PDRRM Planning and Early Warning Section	Approved policies & circulars	PDRRMD	2021-2023	LDRRM FUND

Thematic Area: **DISASTER PREPAREDNESS**

<b>GOAL</b>	A safer, adaptive and disaster resilient communities in an improved environment quality.				
<b>OBJECTIVES</b>	Strengthened capacities of communities in anticipating, coping, & recovering from the negative impacts of emergency occurrences & disasters.				
<b>OUTCOME 1</b>	Increased the level of awareness, skills, & attitudes of the communities to manage with the effects of disaster				
<b>PROGRAMS, PROJECTS AND ACTIVITIES</b>	<b>TARGETS</b>	<b>KEY OUTPUTS</b>	<b>RESPONSIBLE PERSON/AGENCY/OFFICE</b>	<b>TIMEFRAME</b>	<b>SOURCE OF FUNDS</b>
Implemented a comprehensive Prov'l, Mun. & City DRRM IEC program	3 cities and 8 municipalities	Attendance Terminal Report IEC Materials	PDRRMD, PICKMO	2021-2023	LDRRM FUND



Review of DRRM & CCA IEC & Advocacy Program	IEC materials (earthquake, landslide, liquefaction, flood, tsunami, storm surge)	IEC Communication Plan	PDRRMD	2021-2023	LDRRM FUND
Conduct IEC activities in the brgys.	168 barangays prioritizing disaster prone	IEC material Attendance Terminal Report	PDRRMD	2021-2023	LDRRM FUND
Dissemination of updated Hazard map results to the Local Government Units	11 LGUs	Acknowledgement Receipt	PDRRMD	2021	LDRRM FUND
Develop and integrated and simplified IEC material	IEC material developed for earthquake, landslide, liquefaction, flood, tsunami, storm surge, Emerging and Re-emerging Infectious disease (COVID 19), ASF and other diseases	Communication Plan IEC materials	PDRRMD, PHO, PVO, PICKMO	2021-2023	LDRRM FUND
Distribution of IEC Materials to Barangays, Schools, and Private Entities	Barangays, SDRRM, Private Entities	4,000 IEC materials distributed	PDRRMD	2021-2023	LDRRM FUND
Conduct of information drive at the community level on earthquake, landslide, liquefaction, flood, tsunami, storm surge, Emerging and Re-emerging Infectious disease (COVID 19), ASF and other diseases	Constituents of Davao del Norte, Regional, National, International Agencies	Social Media Posts Video coverage Print Media Radio and TV plugging	PDRRMD, PICKMO, MEDIA	2021-2023	LDRRM FUND
Implemented community-based DRRM Training & Awareness building and Planning interventions	At least 75% of 223 Barangay formulated their BDRRMP	Approved Barangay Disaster Risk Reduction Management Plan	PDRRMD, LGU	2021-2023	P/C/M/LDRRM FUND
Conduct of Basic Life Saving Training	Barangay Responders SDRRM Responders PWD, Women, Men, IP, Elderly, Institutions	Post Activity Report	PPDRRMD	2021-2023	LDRRM FUND
Conduct DRRM Orientation	At least 75% of BLGUs conducted with DRRM Orientation	Terminal Report Attendance	PDRRMD	2021-2023	LDRRM FUND

Conduct of scenario-based testing & drills for Tsunami, Flood, Landslide, Fire & Earthquake	Barangay, Schools including PWD, Women, Men, IP, Elderly, and Institutions	Terminal Report Attendance	PDRRMD	2021-2023	LDRRM FUND
Inventory of evacuation center and plan	11 LGUs	Inventory Report	PDRRMD	2021-2023	LDRRM FUND
Inventory of isolation facilities for COVID 19 and other emerging and re-emerging infectious epidemic disease	8 municipalities and 3 cities	Inventory Report	PHO	2021	LDRRM FUND
Formulation of Contingency Plan	11 LGUs formulated CP on 3 major hazards in their AOR	Contingency Plan	PDRRMD	2021-2023	LGU LDRRM FUND
Formulation of Disaster preparedness, response, and rehabilitation and recovery plan	3 Thematic Plan formulated	Disaster Preparedness Plan Disaster Response Plan Disaster recovery and rehabilitation Plan	PDRRMD	2021-2023	LDRRM FUND
Conduct of fire safety seminars & drills	60 Barangays conducted with fire safety seminar, drills	Photo documentation Activity Report	BFP, PDRRMD	2021-2023	LDRRM FUND
Organize, retrain, recruit and accredited volunteer medical responders & fire brigades	10 volunteer responders for each barangay	Appointment of Responders	PDRRMD, PGO	2021-2023	LDRRM FUND
Mainstreamed & integrated DRR-CCA in formal & non-formal education & capacity building initiatives	20% of trainings conducted integrated with DRR-CCA capacity building initiatives	Attendance Terminal Report Modules	DEPED PDRRMD	2021-2023	LDRRM FUND SDRRM FUND
DRR/CCA orientation for teachers, non-teaching personnel, parents & students	80% of DepEd Focal of DRRM; 20% of DepEd students/teachers; 60% students of Uni/Coll. Attended DRR-CCA orientation	Training designs, pictorials, activity report, attendance sheet	DEPED PDRRMD	2021-2023	SDRRM FUND LDRRM FUND
Regular conduct of earthquake drills in public & private schools	90% of DDN schools conducted earthquake and fire drills	Attendance Evaluation Report Pictures	DEPED PDRRMD	2021-2023	SDRRM FUND LDRRM FUND
Conduct of Risk Assessment in schools/offices	20 Disaster prone schools conducted with risk assessment	Risk assessment Report Pictures	DEPED PDRRMD	2021-2023	SDRRM FUND LDRRM FUND

<b>OUTCOME 2</b>	Enhanced the DRRM & CCA capacity of the Brgys., Mun. & City Council members, offices & Operating Centers @ all levels and best practices appreciated				
Provided Capacity Building interventions for the City/Municipality /barangay DRRM council & staff	11 Local Disaster Risk Reduction and Management Offices in Cities, Municipalities, and at least 75% of Barangay Council and Staff	Terminal Report Attendance	PDRRMD	2021-2023	LDRRM FUND
Inventory & rationalization of existing preparedness training being conducted	20 preparedness training conducted to communities & barangays	Inventory Report	PDRRMD	2021-2023	LDRRM FUND
Conduct of Camp Coordination and Camp Management Training	4 Camp Coordination and Camp Mgt. training conducted every year	Terminal Report	PSWD PDRRMD	2021-2023	LDRRM FUND
Provision of training for children on emergency relief and management act	LGU LDRRM Council Members Day Care Parents Teachers	Terminal/Activity Report Attendance	PSWDO	2021-2023	Social Protection and Intervention Program
Conduct Review and Simulation of Contingency Plan	Updated and simulated Contingency Plan on Flood, Earthquake, and Terrorism	Activity Report Attendance	PDRRMD	2021-2023	LDRRM FUND
Conduct of ICS Training and simulation	2 Incident Command System Training Course Conducted	Terminal Report Attendance Training Certificate	PDRRMD OCD	2021-2023	LDRRM FUND
Conduct of RDANA Training	2 LGU RDANA Training conducted every year	Terminal Report Module Photo Document	PDRRMD	2021-2023	LDRRM FUND
Conduct CBDRRM Training	11 CBDRRM Training Conducted	Terminal Report Attendance	PDRRMD	2021-2023	LDRRM FUND
Conduct Psychosocial Support Program/Critical Incident Stress debriefing (CISD) Training	1 PSP/CISD training conducted annually	Terminal Report Attendance	PDRRMD	2021-2023	LDRRM FUND
Conduct of PDNA Training	1 PDNA training conducted annually	Terminal Report Attendance	PDRRMD	2021-2023	LDRRM FUND
Conduct of PDRA Orientation	2 PDRA Orientation Conducted every year	Terminal Report	PDRRMD	2021-2023	LDRRM FUND
Operationalized adequately staffed, fully-equipped &	11 LGUs	Copy of EO, compliance of RA 10121 sec 12	LGU PDRRMD	2021-2023	LDRRM FUND

financial capable provincial, city & municipal DRRM Offices					
Provision of plantilla position for PDRRM Office	At least 9 LDRRMO positions with plantilla appointment	Copy of SB/SP Resolutions	SP/SB LDRRMO	2021-2023	LDRRM FUND
Advocate for the Institutionalization of LDRRM Office per LGU	Additional 10% LDRRM Office Institutionalized in Davao del Norte	Copy of SB/SP Resolutions	SP/SB LDRRMO	2021-2023	LDRRM FUND
Formulated/Reviewed/Updated and implemented comprehensive Provincial, City & Municipal plans	PDRRMC and 11 LGUs formulated/Reviewed/Updated and implemented comprehensive P/C/MDRRM plans	Approved LDRRMC Resolution	PDRRMC	2021-2023	LDRRM FUND
Established fully-functional Operation Center at all Cities and Municipalities of Davao del Norte	11 LGUs with established & functional OpCens	Building Facility Tools, Equipment, Accessories	PDRRMD	2021-2023	LDRRM FUND
Development and or enhancement of a standard Manual of Operations for Operation Centers	11 LGUs with completed Manual of Operation for OpCen	Approved Manual of Operation by LDRRMC	PDRRMD	2021-2023	LDRRM FUND
Inventory of DRRM resources and specialized responders with appropriate equipment	11 LGUS accounted their DRRM Resources	Inventory Report	PDRRMD	2021-2023	LDRRM FUND
Identification of evacuation centers located in safe areas	Identified at least 2 sites	PDRRMC Resolution	PDRRMC	Already completed	LDRRM FUND
Stockpiling and prepositioning of resources for food and health security purposes in times of disasters	2,000 family food packs and 50 medicine kits prepositioned	List of Inventory	PSWD	2021-2023	LDRRM FUND
Provisioning of family tents	10 family tents provisioned	List of Inventory	PSWD	2021-2023	LDRRM FUND
<b>OUTCOME 3</b>	Strengthened partnership and coordination among DRRM key players and stakeholders				
Strengthened partnership and coordination among DRRM key players and stakeholders	4 DRRM Key players forged with Memorandum of Agreement/Understanding	MOA/MOU	PDRRMD	2021-2023	LDRRM FUND

Membership of CSO/POs/NGO in the PDRRMC	4 CSO/PO/NGO are members of the PDRRMC	Provincial Executive Order	PGO PDRRMC	2021-2023	LDRRM FUND
Identification of stakeholders and support groups	4 CSO/PO/NGO are members of the PDRRMC	Meeting Attendance Activity Report	PDRRMD	2021-2023	LDRRM FUND
Creation of directory or database of key players and stakeholders	At least 4 key players/stakeholder identified	List of DRRM key Players and Stakeholders	PDRRMD	2021-2023	LDRRM FUND
Consultation & explanatory dialogue with potential partners	At least 1 consultation/exploratory dialogue conducted annually	Activity Report Attendance	PDRRMD	2021-2023	LDRRM FUND
Signing of MOUs with partners and stakeholders including private sectors	At least 1 MOA/MOU signed annually	SP Resolution Authorizing the LCE to sign MOA/MOU	PDRRMD PSWD SP	2021-2023	LDRRM FUND
Established coordination, complementation and interoperability of work among DRRM stakeholders	At least 6 Response Cluster organized	Executive Order	PDRRMD PGO	2021-2023	LDRRM FUND
Develop and or enhancement of ICS coordination and communication systems	11 LGUs have enhanced coordination & communication systems	Communication Plan Executive Order Structure	LGU	2021-2023	LDRRMF FUND
Develop and or enhance agreed protocol for information gathering and reporting	40 stakeholders provided with enhanced protocols, SOPs for information gathering & reporting	Acknowledgement Receipt	PDRRMD	2021-2023	LDRRM FUND
Develop and /or enhance common and integrated response assessment tools and mechanisms (i.e, SOPs for deployment for and coordination with rapid assessment teams SRR evacuation	Reviewed and Updated Standard Operating Procedures for deployment and coordination with rapid assessment teams	Activity report Attendance PDRRMC Resolution approving the protocol	PDRRMD	2021-2023	LDRRM FUND



Thematic Area: **DISASTER RESPONSE**

<b>GOAL</b>	A safer, adaptive and disaster resilient communities in an improved environment quality.				
<b>OBJECTIVES</b>	Preserved life and properties, met the basic subsistence needs, and restored the basic social services in the affected areas.				
<b>OUTCOME 1</b>	Enhanced measures and coordination				
<b>PROGRAMS, PROJECTS AND ACTIVITIES</b>	<b>TARGETS</b>	<b>KEY OUTPUTS</b>	<b>RESPONSIBLE PERSON/AGENCY/OFFICE</b>	<b>TIMEFRAME</b>	<b>SOURCE OF FUNDS</b>
Generated Disaster Risk Assessment	100% of early warning information with comprehensive pre-disaster risk assessment report	Disaster Risk Assessment Report	PSWDO PDRRMD	2021-2023	LDRRM FUND
Conduct of RDANA meeting	100% of RDANA consolidated	RDANA Report	PSWDO PDRRMD	2021-2023	LDRRM FUND
Actual conduct of RDANA	Disaster affected LGUs conducted RDANA	RDANA Report	PSWDO PAGRO PVO PEO PHO PICKMO PDRRMD LGU	2021-2023	LDRRM FUND
Incident monitoring	All incident monitored	Incident Report	PDRRMD	2021-2023	LDRRM FUND
Consolidation of incident reports	All incident report consolidated	Consolidated Incident Report	PDRRMD	2021-2023	LDRRM FUND
Dissemination of warning advisories and real time reporting	Constituents of the 11 LGUs properly informed on situation relating to	Weather advisories Water Level Advisories	PDRRMD	2021-2023	LDRRM FUND

	hydrometreological and other natural hazard				
Activated multi-agency coordination	Addressed 100 % of identified issues and concerns	MOA, Resolutions, minutes	PDRRMD	2021-2023	LDRRM FUND
Activation and Deployment of RDANA team	All disaster and emergency occurrence deployed with RDANA Team	RDANA Report	PSWDO PDRRMD PEO PAGRO PVO PHO PICKMO	2021-2023	LDRRM FUND
Implementation of evacuation plan	All disaster-affected LGUs activated Evacuation Plan	Memorandum Order Situational Report	PGO PDRRMD	2021-2023	LDRRM FUND
Conduct of pre-emptive evacuation	Disaster Affected Population	Memorandum Order List of Internally Displaced Persons	LGU PDRRMD	2021-2023	LDRRM FUND
Activation of the Response Clusters	All Disaster affected LGU activated their Response Cluster	Memorandum  Minutes of meetings  Requests	PDRRMD LGU LDRRMO	2021-2023	LDRRM FUND
<b>OUTCOME 2</b>	Efficient and gender sensitive search, rescue and retrieval operations				
Activated functional Incident Command System on site	All Disaster- Affected LGUs activated their ICS	Memorandum  Incident Action Plan  Situational report	PDRRMD	2021-2023	LDRRM FUND
Activation of Emergency Operation System	All Disaster- Affected LGUs activated their EOC	Memorandum  Minutes of meetings	PDRRMD	2021-2023	LDRRM FUND
Efficient and gender sensitive search, rescue, retrieval of affected	100% affected individuals rescued	Situation Reports	PDRRMD	2021-2023	LDRRM FUND

individuals		Progress reports			
Order of deployment of responders with necessary tools and equipment	All responders deployed with complete PPEs	List of responders, Activity Report, Directory of responders	PDRRMD	2021-2023	LDRRM FUND
Conduct actual search and rescue operation	100% of responders are in the disaster-stricken area with complete PPEs	Memorandum Incident Action Plan Incident Report	PDRRMD	2021-2023	LDRRM FUND
Conduct actual retrieval operation	100% of responders are in the disaster-stricken area with complete PPEs	Memorandum Incident Action Plan Incident Report	PDRRMD	2021-2023	LDRRM FUND
Management of the dead and missing people	Processed 100% of the documents of disaster and Pandemic (COVID 19) affected population with dead and missing person/people	List of Missing/Dead Person Death Certificate	PDRRMD NBI PSWD DILG PNP PHO	2021-2023	LDRRM FUND
Validation of the identity of missing persons	100% validated the identity of affected population with dead and missing person/people	DNA Report	NBI DOH DILG	2021-2023	LDRRM FUND
Properly identified and facilitated the processing of documents of the dead person	100% identified and processed documents of the dead person	DNA Report	NBI DOH DILG PNP	2021-2023	LDRRM FUND
Issuance of certificate of identification	100% Certificate of identification were already issued by NBI/PNP; Reconciled post and ante-mortem reports	List of issued certificate of identification	DILG/NBI/PNP	2021-2023	LDRRM FUND
Established referral system of the dead person through a MOA with funeral parlors	100% of dead bodies referred to funeral parlors	MOA Complete post mortem reports	PDRRMD	2021-2023	LDRRM FUND

Provision of burial services for disaster and COVID 19 and other epidemic diseases affected individuals/families	100% of burial services provided to disaster and epidemic (COVID 19) affected families/individuals	List of Cadavers Buried Death Certificate	PDRRMD	2021-2023	Social Protection and Intervention Program LDRRM FUND
Enhanced CCCM and relief operation	100% of basic CCCM requirements provided	List of evacuation centers Disaster Assistance Family Access Card	PSWDO	2021-2023	LDRRM FUND
Activation of CCCM and Evacuation Center committees	100% of CCCM and Evacuation Center Committees activated	List of CCCM with evacuation committees Memorandum Order	PSWDO	2021-2023	LDRRM FUND
Master listing and validation of evacuees	100% of evacuees master listed and validated	List of Internally Displaced Person	PSWDO	2021-2023	LDRRM FUND
Mobilization of working groups among IDPs	100% of working groups organized and mobilized among IDPs	Attendance to meetings CCCM Action Plan	PSWDO	2021-2023	LDRRM FUND
Procurement of food and non-food items for affected families	100 % of food and non-food procured	List of food and non-food items for procurement	PSWDO	2021-2023	LDRRM FUND
Provision of family tents, adequate equipment and gender sensitive facilities specially for vulnerable sectors (i.e. child-friendly spaces, PWD accessibility)	100% of temporary shelters constructed	CCCM Report List of Recipient IDP	PSWDO	2021-2023	LDRRM FUND
Provision of emergency shelter assistance (ESA)	100% of affected families provided with ESA	List of Recipients	PSWDO	2021-2023	Community Development Assistance Program LDRRM FUND
Provision of cash for work and sustainable livelihood	100% of affected families provided with cash for work	List of Recipients	PSWDO	2021-2023	LDRRM FUND

Provision of Financial Assistance to COVID 19 Affected families/Individual	100% of COVID 19 affected Indigent families with members who died from the disease	List of Recipient	PSWDO	2021-2022	Social Assistance Program
Provision of food supplies to families on quarantine due to COVID 19 and other epidemic diseases	100% of COVID 19 and epidemic disease affected families	List of Recipient	PSWDO	2021-2022	Social Assistance Program
Provided immediate needs and services to affected population	100% immediate needs provided to affected population	List of Recipients	PSWDO	2021-2023	LDRRM FUND
Adaptation of cluster approach on relief mechanism such as food and non-food items	100% cluster approach on relief mechanisms adapted	Reports & minutes of meeting from food cluster	PSWDO	2021-2023	LDRRM FUND
Activation of relief distribution points/centers	100% relief distribution points/ centers activated	Map of relief distribution points Food and Non-Food Cluster Reports	PSWDO	2021-2023	LDRRM FUND
Transportation of relief goods	100% of relief goods delivered to affected population	Relief Issue Slip Sheet Report	PSWDO PEO	2021-2023	LDRRM FUND
Registration of all disaster-affected families for DAFAC (Disaster Assistance Family Access Cards)	100% of affected families registered to DAFAC	Disaster Affected Family Access Card DAFAC Summary Report	PSWDO	2021-2023	LDRRM FUND
Conduct of relief operation to affected families	100% of affected families provided with relief goods	Relief Distribution Sheet Report	PSWDO	2021-2023	LDRRM FUND
Provision of water utilities	100% of families served with water containers and potable water	Water Rationing Report	PSWDO	2021-2023	LDRRM FUND
Enhanced basic services	100% of affected individuals provided with mental health and psychosocial interventions	Personnel order, patients record, post mission report, assessment report	PHO PSWDO	2021-2023	LDRRM FUND
Provided psychosocial wellbeing, mental health interventions, stress debriefing for disaster affected and COVID 19 affected families/individuals	100% of affected individuals provided with mental health, psychosocial support interventions and stress debriefing	Personnel order, patients record, post mission report, assessment report	PHO PSWDO	2021-2023	LDRRM FUND



Activation and deployment of MHPSS Services	100% of MHPSS cluster coordinative activities conducted	Attendance sheet, minutes of meeting	PHO	2021-2023	LDRRM FUND
Deployed trained MHPSS personnel in the affected communities	100% of affected persons/communities deployed with MHPSS	Office Order, Post-mission Report	PHO	2021-2023	LDRRM FUND
Provided basic health services to affected population whether inside or outside Evacuation Centers	100% of sick and injured individuals provided with basic health services	Situational report, accomplishment report, post-mission report, Health Emergency Alert Reporting System (HEARS)	PHO	2021-2023	LDRRM FUND
Deployment of health response teams (WASH,Medical, Nutrition, Others)	100% of Health response team deployed	Deployment plan, Office order, Post mission report	PHO	2021-2023	LDRRM FUND
Conduct medical consultations, nutritional assessment and other public services	100% of disaster affected population provided with medical consultation, nutritional assessment and other public health services	HEARS, Post-mission report, Consolation log	PHO	2021-2023	LDRRM FUND
Functional Provincial Disease Surveillance Response Unit of Disease System for early detection of possible disease outbreak	100% of PDSR/CESU/MESU are functional	PDSR/PESU Report	PHO	2021-2023	Disease Prevention and Control Program LDRRM FUND
Establishment of mobile health clinics and tent hospitals for mass casualties	100% of casualties served in hospitals during mobile health clinics/field hospitals, and emergencies/disasters	Patient's record	PEEDO	2021-2023	LDRRM Quick Response Fund
Conduct TRIAGE and pre – hospital care	100% of casualties subjected to TRIAGE and given pre-hospital care	Patient's/referral record	PEEDO	2021-2023	LDRRM Quick Response Fund
<b>OUTCOME 5</b>	Monitoring, prevention and control of overpricing/profitteering and hoarding of prime commodities, medicines and petroleum products				
Monitoring, prevention and control of overpricing/profitteering and hoarding of prime commodities, medicines and petroleum products	100% price freeze on price commodities, medicines and petroleum products implemented	Inventory level assessment report. Reports on sources of goods.	DTI	2021-2023	DTI DRRM Fund

Restored basic life lines	100% of Disaster affected LGUs restored their Basic Life Lines	List of radio messages transmitted, list of generator sets (power), List of LGUs with stockpile water containers and water purifiers	PEO PDRRMD DPWH	2021-2023	Infrastructure Development Programs  Quick Response Fund
Activation of organized communication network	100% of Disaster-affected-LGUs that activated their communication network	Memorandum Order	PDRRMD	2021-2023	LDRRM FUND
Augmentation of supply of electricity	100% of Disaster-affected –LGUs are provided with generator set	Reports from PEO/DPWH	PDRRMD Power Corporation	2021-2023	LDRRM FUND
Distribution of potable water to affected communities	100% of Disaster-affected-communities accessed potable water	Consolidated reports of LGUs with sufficient supply of potable water	PDRRMD PEO	2021-2023	LDRRM FUND
Provided Emergency Livelihood assistance	100% of Disaster-affected –communities provided with emergency livelihood assistance	LMMD/DSWD Accomplishment report (List of beneficiaries)	PADO-EWDD PSWDO	2021-2023	LDRRM Quick Response Fund
Cash for work	100% of disaster-affected-population have availed cash for work	Accomplishment report (list of beneficiaries)	PSWD	2021-2023	LDRRM Quick Response Fund  SOCIAL ASSISTANCE PROGRAM
Food for work	100% of Disaster-affected –population have availed food for work assistance	Accomplishment report (list of beneficiaries)	PSWD	2021-2023	LDRRM Quick Response Fund Social Assistance Program
Emergency employment	100% of Disaster-affected-population are provided with emergency employment assistance	List of individuals affected by disaster	DOLE/PADO LDMM	2021-2023	Social Assistance Program
Continuity of education	100% of classes conducted in evacuation centers/sites	Lesson plan, modules, attendance sheets	DEPED	2021-2023	SDRRM FUND
Activation of functional temporary learning spaces	5 temporary learning facilities activated every occurrence of disaster/evacuation	Listings of temporary learning facilities	DEPED	2021-2023	SDRRM FUND  LDRRM Quick

					Response Fund
Distribution of learning resources/materials	Disaster affected schools distributed learning resources	Copies of learning materials/resources	DEPED	2021-2023	SDRRM FUND
Restored government services and economic activities	100% of restored government services and economic activities after disaster	Copy of early recovery plan	DTI	2021-2023	LDRRM Quick Response Fund
Imposition of price ceiling on basic and prime commodities	100% to all basic and prime commodities	Monitoring Report	DTI	2021-2023	DTI DRRM Fund
Conduct Diskwento Caravan	100% deployment of Diskwento Caravan During 5 days after disaster	Sales report	DTI	2021-2023	DTI DRRM Fund
Availability of medicines in the market	100% of disaster events with available medicines within 5 days	Sales report	DTI	2021-2023	
Availability of fuel in the market	100% of disaster events with available fuel in the market within 5 days after the disaster	Sales report	DTI	2021-2023	
Availability of rice in the market	100% of disaster events with available rice in the market within 5 days after the disaster	Situation Report Monitoring Report	DTI	2021-2023	
Availability of clothing/NFIs/processed foods in the market	100% of disaster events with available clothing/NFIs/Processed foods in the market within 5 days after the disaster	Situation Report Monitoring Report	DTI	2021-2023	
Availability of mobile banking	100% of disaster events with functional mobile banking within 5 days after the disaster	Situation Report Monitoring Report	DTI	2021-2023	
Restoring the operations of LGUs	100% of LGUs restored their operation within 5 days after the disaster	Public Service Continuity Plan	DTI	2021-2023	LDRRM Quick Response Fund
Activation of Twinning Policy	100% of Disaster with Twinning Policy	Memorandum of Agreement	DTI	2021-2023	

**Thematic Area: DISASTER REHABILITATION AND RECOVERY**

<b>GOAL</b>	A safer, adaptive and disaster resilient communities in an improved environment quality.				
<b>OBJECTIVES</b>	Fully Fixed/ Recovered communities and environment hit by disaster thru building back-better approach				
<b>OUTCOME 1</b>	Enhanced System of doing post disaster needs assessment, planning, monitoring and evaluation				
<b>PROGRAMS, PROJECTS AND ACTIVITIES</b>	<b>TARGETS</b>	<b>KEY OUTPUTS</b>	<b>RESPONSIBLE PERSON/AGENCY/ OFFICE</b>	<b>TIMEFRAME</b>	<b>SOURCE OF FUNDS</b>
Enhanced System of doing post disaster needs assessment, planning, monitoring and evaluation	11 LDRRMOs enhanced system for PDNA, planning, monitoring and evaluation	PDNA Report	PEO, PAGRO, PSWDO, PHO, DEPED, DPWH	2021	LDRRM FUND
Generation of PDNA data	100% of disaster events with PDNA report	PDNA Report	PEO,PAGRO, PHO,PVO, PSWDO,DPWH,D EPED	2021-2023	LDRRM FUND
Deployment of PDNA Team to disaster-stricken community	100% of disaster incidents w/ the assessed data collected w/ in (1) month after the visit	Copy of draft post DANA report	PEO,PAGRO, PHO,PVO, PSWDO,DPWH,D EPED	2021-2023	LDRRM FUND
Updated rehabilitation & recovery plan	1 all hazard rehabilitation and recovery plan	Copy of the approved updated plan	PEO,PPDO	2021	LDRRM FUND
Conduct workshop & write shop	100% participation of TWG in the Rehabilitation and recovery plan work shop and write shop	Copy of the draft Rehabilitation and Recovery Plan	PEO,PAGRO, PHO,PVO, PSWDO,DPWH,D EPED	2021	LDRRM FUND
Conduct Post Pandemic Monitoring and Evaluation activity	100% participation of Monitoring and Evaluation Team	Post Pandemic M and E Report	PAGRO, PHO,PVO, PSWDO, DOH,PDRRMD, PICKMODEPED	2021	LDRRM FUND
<b>OUTCOME 2</b>	Upgraded DRR-CCA resilient Infrastructure, agricultural and social facilities & utilities				

Upgraded DRR-CCA resilient Infrastructure, agricultural and social facilities & utilities	100% of damaged infrastructure, agricultural and social services reconstructed/rehabilitated according to DRR-CCA resilience standards of build back better	Accomplishment Report Project Completion Report	PEO, PAGRO, PSWDO, PHO	2021-2023	LDRRM Fund  Infrastructure Development Fund
Restored/repair Infrastructure, agricultural and social facilities & utilities following the standards of safety & resiliency	100% damaged agricultural and social facilities & utilities restored/rehabilitated based to standard of DRR-CCA resiliency	Accomplishment report	PEO/PSWDO	2021-2023	Quick Response Fund  Infrastructure Development Fund
Monitored/Evaluated recovery/rehab. PPA's	100% of PPA's monitored & evaluated	Monitoring and evaluation Report	PEO/DPWH	2021-2023	LDRRM Fund  Infrastructure Development Fund
Provision of agricultural/hydrological infra. That are DRR-CCA resilient	100% of affected farmers provided w/ DRR-CCA agricultural/hydrological infra	Accomplishment report	DA-NIA	2021-2023	
<b>OUTCOME 3</b>	Strengthened/improved DRR-CCA of human sensitivity on settlements, environment livelihood opportunities				
Strengthened/Improved DRR-CCA of Human sensitivity on settlements, environment, livelihood opportunities	100% of displaced households provided with settlements, safe environment, and livelihood opportunities w/c are DRR-CCA sensitive.	List of beneficiaries MLGU's/PLGU's accomplishment report	LDRRMO/LGU	2021-2023	LDRRM Fund
Building – Back – Better safe relocation & resettlement sites with standard operational facilities & utilities	100% of affected households provided w/ safe relocation sites	PLGUs/CLGUs & MLGUS report	LDRRMO/LGU	2021-2023	Community Development Assistance Fund
Provide standards designs for houses or shelters	100% of projects with standards designs	Program of Work	PEO	2021-2023	Community Development and Assistance Fund
Const./Repair/Rehab. Of dilapidated houses or shelter	100% dilapidated houses or shelters repaired	Accomplishment Report	PEO NHA DSWD	2021-2023	Community Development and Assistance Fund
Provision of Emergency Shelter Assistance	50% of family victims repaired/const.damaged/shelter	List of affected beneficiaries Accomplishment Report	NHA/DSWD/DP WH	2021-2023	Community Development and Assistance Fund
Food for work program	20% of family victims provided with food for work	List of affected beneficiaries Accomplishment Report	PSWD	2021-2023	LDRRM Fund



Cash/Financial Assistance for work program	20% of family victims	List of affected beneficiaries Accomplishment Report	PSWD	2021-2023	Social Protection and Intervention Program
Provision of financial assistance for individuals/families whose livelihood were affected by COVID 19 and African Swine Fever Diseases for fast recovery	Small scale livelihoods and swine farms	List of Recipient	PSWD, PVO, PHO	2021-2022	Social Protection and Intervention Program
Provided sustainable Livelihood projects and CAPDEV	100% of households provided with CAPDEV and livelihood projects	Accomplishment Report	PADO/PGO	2021-2023	Livelihood and Skills Development Program
Community organizing and CAPDEV for community Base Road maintenance Contracting (CBRMC)	100% of association provided with CBRMC	Contract	PEO PaDO-IAS PGSO PASSO PBO PAGRO PLO	2021-2023	LDRRM Fund
Sustainable livestock dispersal	75% of qualified beneficiaries provided on the first year 85% of qualified beneficiaries provided on the second year 100% of qualified beneficiaries provided on the first year	List of beneficiaries	PVO	2021-2023	Livestock Development Program
Provision of fast growing and climate resilient crops, fingerlings and organic fertilizers	75% of qualified beneficiaries provided on the first year 85% of qualified beneficiaries provided on the second year 100% of qualified beneficiaries provided on the first year	List of beneficiaries C/MLGU/PLGU reports	MAGRO PAGRO DA BFAD	2021-2023	Agri-Aquaculture Enhancement Program
<b>OUTCOME 4</b>	Strengthened the PLGU team that conducted psychological assessment to the disaster-stricken communities to restore them to normal condition physically/ spiritual & morally				
Organized “CISD TEAM (Critical Incidence Stress Debriefing)” at the CLGU’s & MLGU’s	11 LGUs have organized CISD Team  100% of the disaster stricken Individual screened and identified	Assessment Report List of	PHO	2021-2023	LGU LDRRM Fund
Identification & screening of the affected beneficiaries/clients	100% of the disaster stricken Individual screened and identified	Assessment Report List of assessed individuals	PHO	2021-2023	LGU LDRRM Fund

Mental health and psychosocial services	100% of disaster stricken individuals provided with mental health and psychosocial services including those individuals/families affected by the COVID 19	Medical Report	PHO PSWD	2021-2023	LGU LDRRM Fund
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### F. Monitoring and Evaluation

Monitoring and evaluation (M&E) is incorporated in the plan using the prescribed Results Matrix. The objectives of M&E are the following:

1. To determine the extent of the outcomes embodied in the plan.
2. To promote the culture of results-based in development undertakings.
3. To provide feed backing mechanism to the higher authorities on the progress of the outcomes or results stipulated in the plan.

M&E will look into PDRRMP’s accomplishments in relation to its contribution in the achievement of the over-all goal of a safer, adaptive and risk resilient communities in an improved environment quality.

#### Monitoring and Evaluation Plan of Thematic Area

There shall be templates for the M & E system to ensure the performances of the Provincial Government’s efforts in achieving its goal by gauging the expected results or outcomes of the various programs, projects and activities implemented. The targets to be monitored per Thematic Area shall be culled out from the targets as specified annually in the plan.

#### Disaster Prevention and Mitigation

EXPECTED RESULT	BASELINE 2020	ASSUMPTIONS	Objective Verifiable Indicator	TARGETS	DATA SOURCES	COLLECTION METHODS	FREQUENCY AND AUDIENCE OF THE REPORT	OPR/PPR	RESOURCES NEEDED
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<p>Minimized vulnerability and exposure of the population to all hazard</p>	<ul style="list-style-type: none"> <li>Decreased the number of populations exposed to hazard by 20 %</li> <li>37.5 hectares planted with 31, 144 forest seedlings in critical areas</li> <li>8.22 has Of riverbanks planted with 5,250 forest seedlings</li> <li>205.7 linear meter dikes constructed</li> <li>20 km river desilted</li> <li>1500 linear meter roads &amp; drainage</li> <li>20% of roads &amp; bridges audited</li> <li>7,672 patients examined and treated</li> <li>Conducted 24 IEC on communicable and environmental related disease</li> </ul>	<p>Availability of Focal Persons in relation to monitoring schedule</p>	<p>No. of population</p> <p>No. of Hectares</p> <p>No. of persons examined</p> <p>No. of IEC activity conducted</p>	<ul style="list-style-type: none"> <li>11 LGUS</li> <li>Saug and Liboganon River banks</li> <li>205 linear meter Liboganon dike                             <ul style="list-style-type: none"> <li>55 barangays affected by flooding</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Attendance</li> <li>Actual Plan</li> <li>Terminal Report                             <ul style="list-style-type: none"> <li>Pictures</li> </ul> </li> <li>Situation Report</li> <li>Program of work</li> <li>Completion report</li> </ul>	<ul style="list-style-type: none"> <li>Actual Inspection of Plan</li> <li>Collection of Terminal Reports and documentation                             <ul style="list-style-type: none"> <li>FGD</li> <li>KII</li> </ul> </li> </ul>	<p>Every Quarterly Meeting of the PDRRMC and RDRRMC</p>	<p>Four Thematic Focal Persons</p>	<ul style="list-style-type: none"> <li>Personnel</li> <li>Camera</li> <li>Computer</li> </ul>
<p>Enhanced capacities of the institution to reduce the risks from all hazards</p>	<ul style="list-style-type: none"> <li>Updated PDPFP and AIP mainstreaming DRR-CCA</li> <li>Enhanced 6 hazard maps</li> <li>3 LDRRMOs Funded</li> <li>1 organic agriculture technology introduced</li> <li>11 Cities and municipalities adopted Animal health Care and Management Program</li> <li>955 hectares ensured under PCIC</li> <li>Trained the communities in Pagsabangan, Sagayan, Maniki on</li> </ul>	<p>Availability of Focal Persons in relation to monitoring schedule</p>		<ul style="list-style-type: none"> <li>11 LGUs</li> </ul>	<ul style="list-style-type: none"> <li>Annual Investment Plan</li> <li>Actual Hazard Maps</li> <li>PDPFP</li> <li>Appointment of Personnel</li> <li>Actual survey/inspection in the area</li> <li>Attendance</li> <li>Terminal report</li> </ul>	<ul style="list-style-type: none"> <li>Actual Inspection of Plan and maps</li> <li>Collection of Terminal Reports and documentation                             <ul style="list-style-type: none"> <li>FGD</li> <li>KII</li> </ul> </li> </ul>	<p>Every Quarterly Meeting of the PDRRMC and RDRRMC</p>	<p>Focal Person of Four Thematic Area</p>	<ul style="list-style-type: none"> <li>Venue of the meeting</li> <li>Personnel</li> <li>Computers</li> <li>Printers</li> </ul>

	<ul style="list-style-type: none"> <li>monitoring the water level of the river</li> <li>Installed 3 water level monitoring cameras and procured drone</li> <li>Trained the 11 LGUs on weather forecasting and water level monitoring</li> </ul>								
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Disaster Preparedness'

EXPECTED RESULT	BASELINE 2020	ASSUMPTIONS	Objective Verifiable Indicator	TARGETS	DATA SOURCES	COLLECTION METHODS	FREQUENCY AND AUDIENCE OF THE REPORT	OPR/PPR	RESOURCES NEEDED
Increased the level of awareness, skills, & attitudes of the communities to manage with the effects of disaster	<ul style="list-style-type: none"> <li>Reviewed the LDRRM Plan of the 11 LGUs</li> <li>6,776 individual attended the DRR IEC Activities</li> <li>11 LGUs received Hazard Maps</li> <li>IEC materials on Flood, Earthquake, Storm Surge, Typhoon, Tsunami and</li> </ul>	<ul style="list-style-type: none"> <li>Cooperation of LGUs and Barangays</li> </ul>	<ul style="list-style-type: none"> <li>No. of plans Reviewed</li> <li>No. of individuals attended the IEC</li> <li>No. of LGUs received the Maps</li> <li>No. of IEC Materials printed and distributed</li> <li>No. of Assessment conducted</li> </ul>	11 LGUs	<ul style="list-style-type: none"> <li>Attendance</li> <li>LDRRM Plan Review Certificate</li> <li>Hazard Map Copies</li> <li>Printed IEC Materials</li> <li>Pictures</li> <li>Terminal reports</li> </ul>	<ul style="list-style-type: none"> <li>Actual Evaluation of Drills</li> <li>Sitrep</li> </ul>	PDRRMC and RDRRMC Quarterly Meeting	4 Thematic Focal Persons	<ul style="list-style-type: none"> <li>Personnel</li> <li>Computer</li> <li>Funds</li> <li>Venue for meetings</li> </ul>

	<p>printed and distributed</p> <ul style="list-style-type: none"> <li>• Conducted Risk Assessment in three schools</li> <li>• 100% of schools conducted Quarterly Earth quake Drills</li> </ul>								
<p>Enhanced the DRRM &amp; CCA capacity of the Brgys., Mun. &amp; City Council members, offices &amp; Operating Centers @ all levels and best practices appreciated</p>	<ul style="list-style-type: none"> <li>• 20 Disaster Preparedness Training Conducted in communities throughout the province</li> <li>• Four Camp coordination Training Conducted</li> <li>• Four LGUs conducted CP Formulation</li> <li>• 1 ICS Training Conducted</li> <li>• 2 RDANA Training Conducted</li> <li>• 1 CBDRRM Training Conducted throughout IGACOS</li> <li>• 1 PSP/CISD Training</li> </ul>	<p>Cooperation of LGUs</p> <p>Availability of Funds</p> <p>Availability of data</p>	<ul style="list-style-type: none"> <li>• No. of trainings conducted</li> <li>• No. LGUs prepared CP</li> <li>• No. of ICS Training Conducted</li> <li>• No. of RDANA/PDANA/CBDRRM/CISD/ PSP Training Conducted</li> <li>• No. of Plantilla Position Funded</li> </ul>	11 LGUs	<ul style="list-style-type: none"> <li>• Appointment of personnel</li> <li>• Attendance</li> <li>• Terminal Report</li> <li>• Training certificates</li> </ul>	<ul style="list-style-type: none"> <li>• Collection of Supporting Documents</li> </ul>	<p>PDRRMC and RDRRMC Quarterly Meeting</p>	4 Thematic Focal Persons	<ul style="list-style-type: none"> <li>• Personnel</li> <li>• Computer</li> <li>• Funds</li> <li>• Venue for meetings</li> </ul>



	<ul style="list-style-type: none"> <li>Conducted</li> <li>• 1 PDNA Training conducted</li> <li>• 2 PDRA orientation conducted</li> <li>• 3 plantilla position funded</li> </ul>								
Strengthened partnership and coordination among DRRM key players and stakeholders	<ul style="list-style-type: none"> <li>Established partnership with NFA, BFP, PNP, Buenas, Schools, LGUS</li> <li>Established directory of DRRM Key player throughout the Province</li> <li>12 exploratory consultation with potential partners conducted</li> <li>Signed 10 MOUs</li> <li>Organized 10 Response Clusters</li> <li>Established the IMT of the Province</li> <li>Enhanced the Protocol</li> </ul>	<ul style="list-style-type: none"> <li>Cooperation of LGUs</li> <li>Availability of Funds</li> <li>Availability of data</li> </ul>	<ul style="list-style-type: none"> <li>No. of established Partnership</li> <li>Directory established</li> <li>No. of consultation conducted</li> <li>No. of MOUs signed</li> <li>No. of cluster organized</li> <li>No. of stakeholders attended the enhancement of protocol</li> </ul>	11 LGUs	<ul style="list-style-type: none"> <li>Actual MOU/MOA</li> <li>Actual Directory</li> <li>Attendance of Meeting</li> <li>Actual Structure</li> </ul>	<ul style="list-style-type: none"> <li>Actual inspection of documents</li> </ul>	PDRRMC and RDRRMC Quarterly Meeting	4 Thematic Focal Persons	<ul style="list-style-type: none"> <li>Personnel</li> <li>Computer</li> <li>Funds for meetings</li> </ul>

	of the Province on Response before during and after								
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### Disaster Response

EXPECTED RESULT	BASELINE 2020	ASSUMPTIONS	Objective Verifiable Indicator	TARGET	DATA SOURCES	COLLECTION METHODS	FREQUENCY AND AUDIENCE OF THE REPORT	OPR/PPR	RESOURCES NEEDED
Enhanced measures and coordination	<ul style="list-style-type: none"> <li>Consolidated all RDANA report</li> <li>Consolidated incident report</li> <li>Disseminated all warning advisories</li> <li>Activated Response Cluster/IMT/RDANA during disaster</li> </ul>	<ul style="list-style-type: none"> <li>Cooperation of Agencies</li> <li>Availability of reports from LGUs</li> </ul>	<ul style="list-style-type: none"> <li>No. of advisories, reports, consolidated and disseminated</li> <li>No. of systems/cluster activated</li> </ul>	<ul style="list-style-type: none"> <li>Response Cluster/IMT/RDANA</li> </ul>	<ul style="list-style-type: none"> <li>Reports</li> <li>Activation Memo</li> </ul>	<ul style="list-style-type: none"> <li>Collection documents</li> </ul>	RDRRMC and PDRRM Quarterly Meetings	PDRRMD	<ul style="list-style-type: none"> <li>Funds</li> <li>Venue of Meeting</li> </ul>
Efficient and gender sensitive search, rescue and retrieval operations	<ul style="list-style-type: none"> <li>11 LGUs activated ICS/EOC/CCM during disaster</li> <li>Rescued affected families during flooding</li> </ul>	<ul style="list-style-type: none"> <li>Cooperation of LGUs during monitoring</li> <li>Availability of information</li> </ul>	<ul style="list-style-type: none"> <li>No. of activation</li> <li>No. of rescue operation and rescued families</li> </ul>	<ul style="list-style-type: none"> <li>CCCM</li> <li>Responder</li> <li>Disaster Affected LGUs</li> </ul>	<ul style="list-style-type: none"> <li>Activation Memo</li> <li>Logbook</li> </ul>	<ul style="list-style-type: none"> <li>Collection documents</li> </ul>	RDRRMC and PDRRMC Quarterly Meeting	4 Thematic Committees	<ul style="list-style-type: none"> <li>Personnel</li> <li>Office Supplies</li> <li>Computer</li> <li>Funds</li> <li>Venue</li> </ul>

Enhanced CCCM and Relief Operation	<ul style="list-style-type: none"> <li>Served affected families during disaster</li> </ul>	<ul style="list-style-type: none"> <li>Cooperation of Agencies involved in CCCM</li> </ul>	<ul style="list-style-type: none"> <li>No. of Food and Non-Food/ESA/Temporary Shelter Items distributed</li> </ul>	<ul style="list-style-type: none"> <li>Disaster Affected Barangays</li> </ul>	<ul style="list-style-type: none"> <li>Masterlist of IDPs</li> <li>List of Beneficiary ESA/Food and Non-Food</li> <li>Disaster Assistance Family Access Cards</li> </ul>	<ul style="list-style-type: none"> <li>Collection of documents</li> <li>Actual Inspection</li> </ul>	<ul style="list-style-type: none"> <li>RDRRM C and PDRRM C Quarterly Meeting</li> <li>LCE</li> <li>PACCO</li> <li>COA</li> </ul>	PSWDO	<ul style="list-style-type: none"> <li>Personnel</li> <li>Office Supplies</li> <li>Computer</li> <li>Funds</li> <li>Venue</li> </ul>
Enhanced Basic Services	<ul style="list-style-type: none"> <li>Psychosocial Interventions provided to disaster affected individual</li> </ul>		<ul style="list-style-type: none"> <li>No. of Affected Individuals</li> </ul>	<ul style="list-style-type: none"> <li>Disaster Affected Barangays</li> </ul>	<ul style="list-style-type: none"> <li>Attendance</li> <li>Terminal Report</li> </ul>	<ul style="list-style-type: none"> <li>Cosolidation of submitted supporting documents attesting to the conduct of the activity</li> </ul>	<ul style="list-style-type: none"> <li>RDRRM C and PDRRM C Quarterly Meeting</li> </ul>	PHO	<ul style="list-style-type: none"> <li>Personnel</li> <li>Office Supplies</li> <li>Computer</li> <li>Funds</li> <li>Venue</li> </ul>
Monitoring prevention and control of overpricing/profitteering and hoarding prime commodities, medicines and petroleum products	<ul style="list-style-type: none"> <li>100% of business entities monitored</li> </ul>		<ul style="list-style-type: none"> <li>No. of Business Entities monitored</li> </ul>	<ul style="list-style-type: none"> <li>DTI</li> <li>Business Entities</li> </ul>	<ul style="list-style-type: none"> <li>Memorandum</li> <li>Reports</li> </ul>	<ul style="list-style-type: none"> <li>Submission of reports</li> </ul>	<ul style="list-style-type: none"> <li>RDRRM C and PDRRM C Quarterly Meeting</li> </ul>	DTI	<ul style="list-style-type: none"> <li>Personnel</li> <li>Office Supplies</li> <li>Computer</li> <li>Funds</li> <li>Venue</li> </ul>

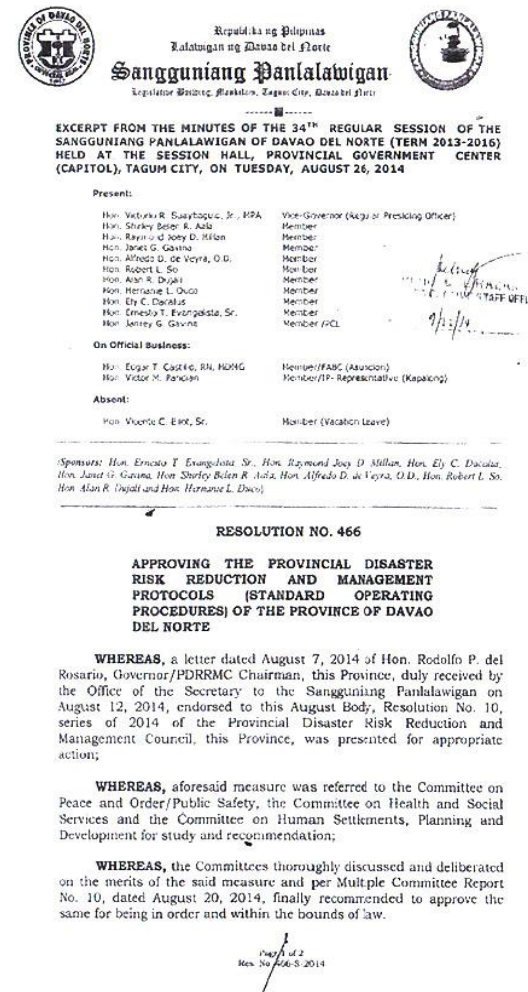
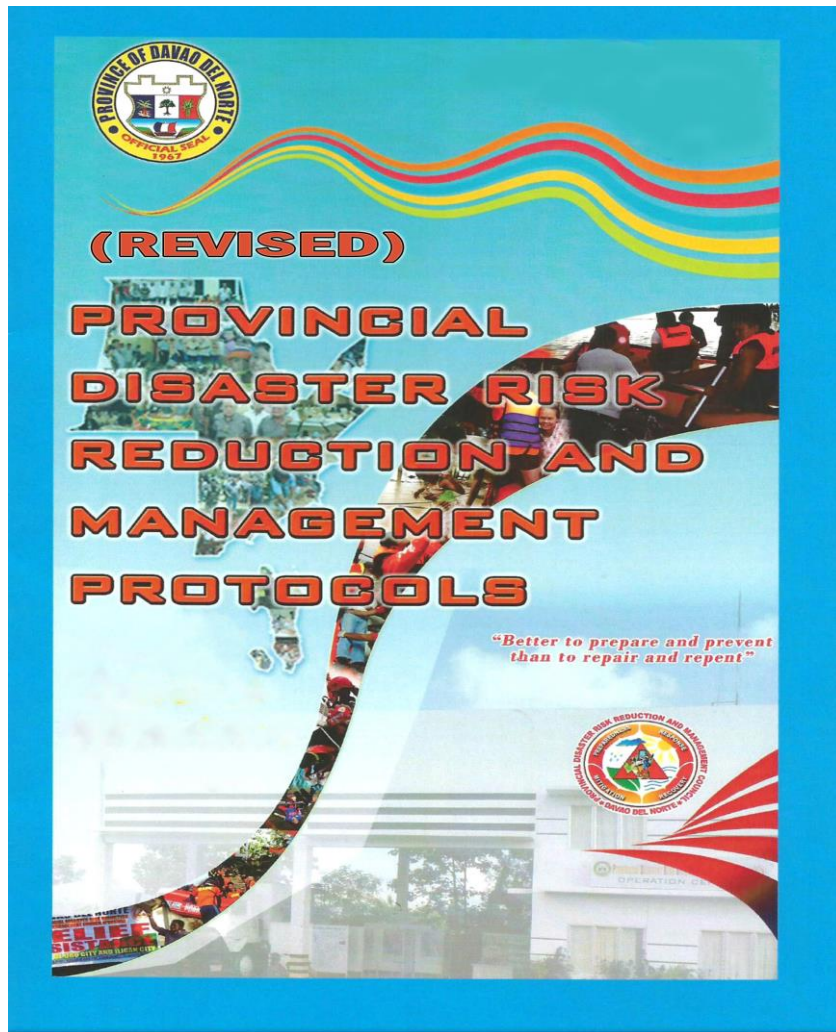
### Disaster Rehabilitation and Recovery

EXPECTED RESULT	BASELINE 2020	ASSUMPTIONS	Objective Verifiable Indicator	TARGETS	DATA SOURCES	COLLECTION METHODS	FREQUENCY AND AUDIENCE OF THE REPORT	OPR/PPR	RESOURCES NEEDED
Enhanced System of doing post damage	100% of major disaster	<ul style="list-style-type: none"> <li>PDNA team in 11 LGUs in place</li> </ul>	Percentage of major disaster	100% disaster affected	<ul style="list-style-type: none"> <li>PDNA Report</li> <li>Certificate of</li> </ul>	<ul style="list-style-type: none"> <li>Consolidation of supporting documents</li> </ul>	Quarterly PDRRM C and RDRRM C Meeting	4 thematic Committees	<ul style="list-style-type: none"> <li>Personnel</li> <li>Office Supplies</li> <li>Computer</li> </ul>

assessment and needs analysis, planning, monitoring and evaluation	incident deployed with PDNA team		incident deployed with PDNA Team	LGUs	<ul style="list-style-type: none"> <li>Appearance Memorandum Order</li> </ul>	attesting to the conduct of PDNA			<ul style="list-style-type: none"> <li>Funds</li> <li>Venue</li> </ul>
Upgraded DRR-CCA resilient Infrastructure, agricultural, and social facilities and utilities	80% of damage structures rehabilitated	Availability of Funds	Percentage of damage structures rehabilitated	Affected LGUS	<ul style="list-style-type: none"> <li>Program of Work</li> <li>Project Completion Report</li> </ul>	<ul style="list-style-type: none"> <li>Consolidation of supporting documents</li> </ul>	Quarterly PDRRMC and RDRRMC Meeting	PEO	
Strengthened and improved DRR/CCA of Human sensitivity on settlements, environment, livelihood opportunities	80% of affected population provided with assistance to rehabilitate their damage houses, cash for work and food for work		Percentage of affected families served	Affected LGUs	<ul style="list-style-type: none"> <li>List of Beneficiary</li> </ul>	Consolidation of supporting documents	Quarterly PDRRMC and RDRRMC Meeting	4 thematic Committees	<ul style="list-style-type: none"> <li>Personnel</li> <li>Office Supplies</li> <li>Computer</li> <li>Funds</li> <li>Venue</li> </ul>
Strengthened the PLGU team that conducted psychological assessment to the Dabaonon after the disaster to restore them to normal condition physically/spiritual/ and morally	80% of affected individuals identified, screened and served		Percentage of affected Beneficiaries served		<ul style="list-style-type: none"> <li>List of Beneficiary</li> <li>Attendance</li> </ul>	<ul style="list-style-type: none"> <li>Program of Work</li> <li>Project Completion Report</li> </ul>	<ul style="list-style-type: none"> <li>Consolidation of supporting documents</li> </ul>	4 thematic Committees	

## G. ANNEXES

### PDRRM Protocol

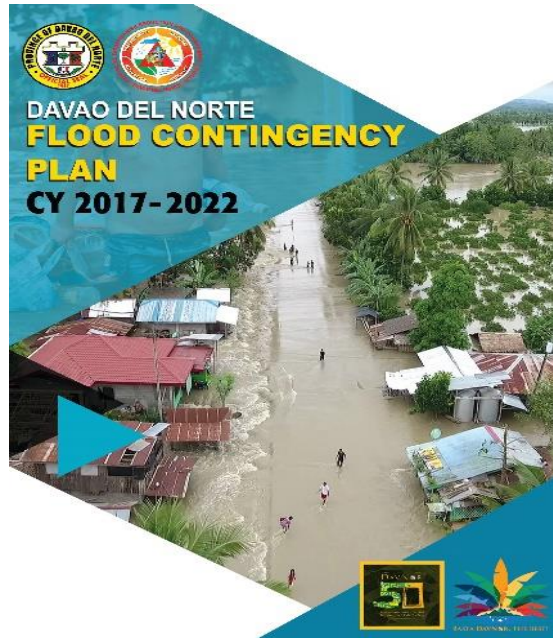
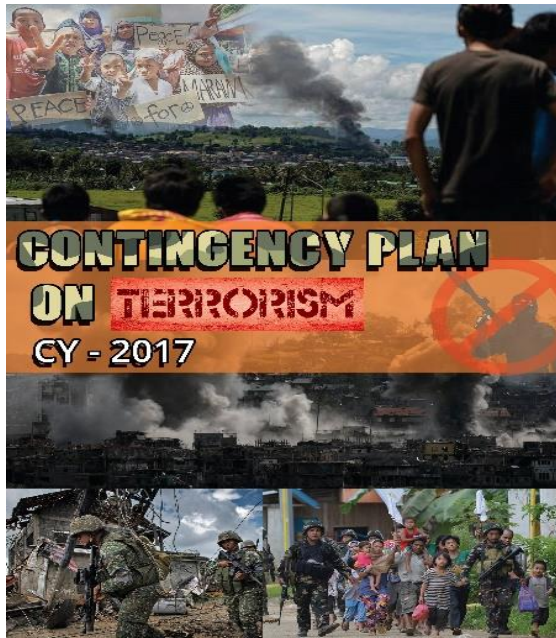


Davao del Norte Provincial Disaster Risk Reduction and Management Council  
List of Activities for Disaster Preparedness CY 2019

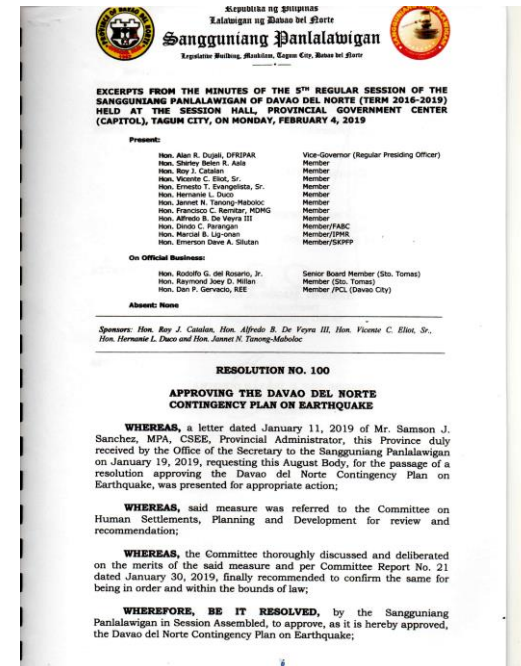
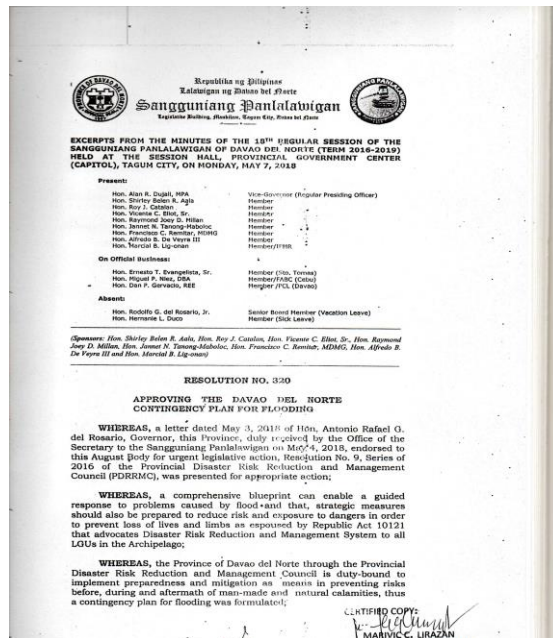
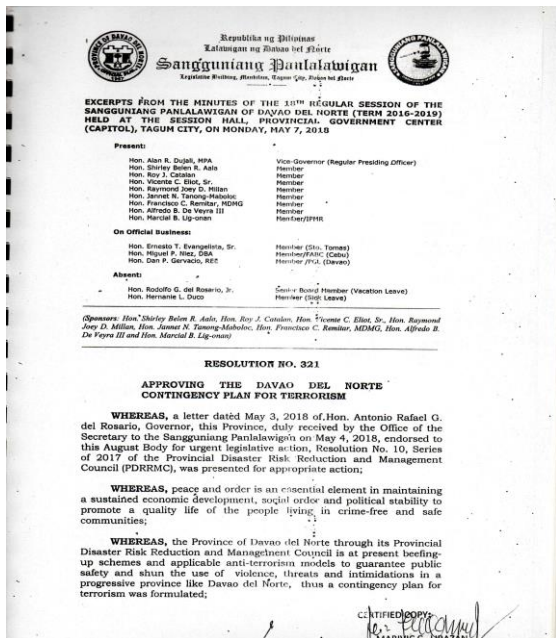
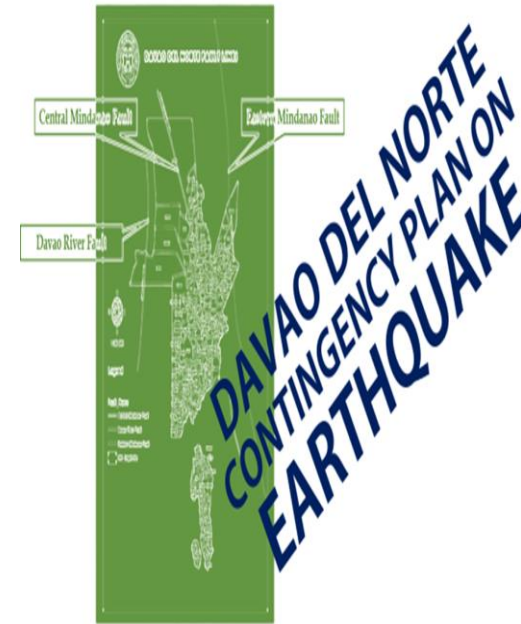
Activity	Date	Venue	Participants	
			Male	Female
Barangay Disaster Risk Reduction and Management Planning of the Local Government Unit of Kapalong	November 11-13, 2019	Heroben Hometel, Osmeña Ext., Tagum City, Davao del Norte	23	27
Restricted Land Mobile Permit (Rlmp) And Basic Operation, Proper Handling and Maintenance of Handheld Radio Seminar	December 10, 2019	PDRRMC Training Center, Provincial Government Center, Mankilam, Tagum City, Davao del Norte	49	32
Barangay Disaster Risk Reduction and Management Planning of the Local Government Unit of Carmen, Talaingod, Braulio E. Dujali and San Isidro Municipalities	December 11-13, 2019 December 17-19, 2019	PDRRMC Operation Center Bulwagan ng Karunungan,	43	67
Incident Command System Position Courses Training	25-29 November 2019	Molave Hotel, Tagum City, Davao del Norte	17	33



Review Of The Local Disaster Risk Reduction And Management Plan Of The Eleven (11) Local Government Unit Of Davao Del Norte	October 24-25, 2019	Provincial Disaster Risk Reduction and Management Council Training Center, Government Center, Mankilam, Tagum City, Davao del Norte	14	22
Emergency Operation Center Training Course	October 21-23 2019	Molave Hotel, Osmeña St., Tagum City, Davao del Norte.	18	31
Incident Command System - Executive Course	26 September 2019	Molave Hotel, Osmeña St., Tagum City, this Province	26	24



CONTINGENCY PLAN



## DAVAO DEL NORTE DIRECTORY OF LDRRMO

LGU: Davao del Norte

Contact Person/Head of Office: Glenda O. Delideli

Designation: LDRRMO IV

Contact Number: 09483195216

Email Address: [davnorpdrmc@gmail.com](mailto:davnorpdrmc@gmail.com)

Existing Radio Communication Equipment: VHF Radio Base, Repeater, Handheld Radio, Mobile Radio

Radio Communication Frequency: 149.200

LGU: Santo Tomas

Contact Person/Head of Office: Engr. Mario M. Rebote

Designation: MGDH - 1

Contact Number: 09176317540

Email Address: [santotomas8112@gmail.com](mailto:santotomas8112@gmail.com)

Existing Radio Communication Equipment: Repeater, Base and Handheld Radios

Radio Communication Frequency: 5202.0MHz (Pennelyn base)

LGU: Panabo City

Contact Person/Head of Office: Prosper D. Dajalos, Jr

Designation: LDRRMO IV

Contact Number: 09985677847

Email Address: [pears\\_responder@yahoo.com](mailto:pears_responder@yahoo.com)

Existing Radio Communication Equipment: Repeater, Base and Handheld Radios

Radio Communication Frequency: 156.350MHz (Reactor)

LGU: Talaingod

Contact Person/Head of Office: Engr. Brylle P. Lugatiman, CE

Designation: MGDH I/ MDRRMO Head

Contact Number: 09102271728

Email Address: [roquejohnchristian@gmail.com](mailto:roquejohnchristian@gmail.com)

Existing Radio Communication Equipment: Radio Base (Lifesaver), Handheld Radios  
Radio Communication Frequency: 152.695

LGU: Carmen

Contact Person/Head of Office: For. Olympio G. Bagnol, Jr., MPA

Designation: LDRRMO III

Contact Number: 0948-313-1483 (SMART) 0927-945-3842 (GLOBE)

Hotline: 0951-519-1482 (SMART) : 0945-662-0059 (GLOBE)

Email Address: olybag18@gmail.com

Existing Radio Communication Equipment: 1 UNIT LANDBASE (242)

Radio Communication Frequency: 147.225

LGU: Kapalong

Contact Person/Head of Office: Ladalio V. Doronio, Jr., RME, MPA

Designation: Officer – In- Charge MDRRMO

Contact Number: 09358668329/ 09327744581

Email Address: mdrmmokapalong@gmail.com

Existing Radio Communication Equipment: 2 units Land Base (KILOMIKEHOTEL)

Radio Communication Frequency: 151.080

LGU: Island Garden City of Samal

Contact Person/Head of Office: Janus D. Rafailles, LPT, MEP

Designation: LDRRMO IV

Contact Number: 09176323101 (GLOBE) /09399131345 (SMART)

Email Address:

Existing Radio Communication Equipment: KABALIKAT

Radio Communication Frequency: 146.285

LGU: Braulio E. Dujali

Contact Person/Head of Office: Joelito B. Juriana, MPA

Designation: LDRRMO II

Contact Number: 09501660539

Email Address:

Existing Radio Communication Equipment: Radio Base (Greenland) & Handheld Radios

Radio Communication Frequency: 143.100

LGU: New Corella

Contact Person/Head of Office: Joe Mar I. Chatto

Designation: LDRRMO III

Contact Number: 09284014768

Email Address: chattto.joemar@yahoo.com

Existing Radio Communication Equipment: Repeater, handheld radio

Radio Communication Frequency: 160.200

LGU: San Isidro

Contact Person/Head of Office: Allan P. Delideli

Designation: LDRRMO

Contact Number: 09265336473 (GLOBE) 09176564920 (TM)

Email Address: sni\_xi@yahoo.com

Existing Radio Communication Equipment: Repeater, Base and Handheld Radio

Radio Communication Frequency: 165.465

LGU: Asuncion

Contact Person/Head of Office: Edgar T. Castillo, RN, DPA

Designation: LDDRRMO V

Contact Number: 0909-449-3312


Email Address: ldrmoasuncion@gmail.com

Existing Radio Communication Equipment: Radio Base (Sea breeze/Control) and handheld radios


Radio Communication Frequency: 149.28



## Process Involved in Updating the DRRM Plan – Climate Change Adaptation of Davao del Norte



Republic of the Philippines  
Provincial Government of Davao del Norte



PROVINCIAL DISASTER RISK REDUCTION AND MANAGEMENT DIVISION

TERMINAL REPORT

**DAVAO DEL NORTE DRRM – CCA REVIEW AND UPDATING BY THE FOUR THEMATIC COMMITTEE AND APPROVAL OF PDRRMC SPECIAL ACTION COMMITTEE**

**Rationale:**

Section 12, (4) of Republic Act 10121 states that the PDRRMC shall formulate and implement a comprehensive and integrated LDRRMP in accordance with the national, regional and provincial framework, and policies on disaster risk reduction in close coordination with the Local Development Councils (LDCs);

NDRRMC Memorandum Circular No. 147, s. 2017 prescribe the guidelines in the conduct and evaluation of the Local Disaster Risk Reduction and Management Plans (LDRRMPs) pursuant to Section 9 (e) of RA 10121 and paragraph 2.2.11 of the Local Budget Memorandum No. 75, s. 2017;

Abiding to the policies mentioned, the Four Thematic Committees' Focal Persons reviewed and updated the Davao del Norte DRRM – CCA Plan on October 23, 2020 basing their review on the Provisional Review Form and Checklist for the Monitoring and Evaluation of LDRRMP from RDRRMC Review Team through a video conference in adherence to the President's declaration during the 5<sup>th</sup> SONA to disallow face-to-face activities until the COVID-19 vaccine is made available and in adherence to the Office of the Civil Defense guidelines in the conduct of Local DRRM Plan Review during this time of pandemic.

After duly reviewed and updated the DRRM – CCA Plan was presented to the PDRRMC Special Action Committee for urgent approval on 27 October 2020, 1:00 PM.

**Objective:**

Adhering to the processes enshrined in Republic Act 10121 and NDRRMC Memorandum Circular No. 147, s. 2017, the series of activities were conducted for the approval of the Davao del Norte DRRM – CCA Plan CY 2021 – 2023.

**Methodology:**


The review, updating, and meeting process was done through video conferencing in accordance to the OCD guidelines and President's declaration to disallow face to face activities.


As basis of the Four Thematic Committees (PSWDO, PEO, PPDO and PDRRMD) for the review and updating the Provisional Review and Checklist for the Monitoring and Evaluation of LDRRMP issued by the RDRRMC was made reference.



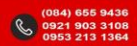
Quorum was achieved during the presentation of the plan to the PDRRMC Special Action Committee Members with twelve members present out of seventeen.

**Output of the Activity:**

The Provincial Disaster Risk Reduction and Management Council issued Resolution No. 11, s. 2020 approving the Davao del Norte Disaster Risk Reduction and Management – Climate Change Adaptation Plan CY 2021 – 2023.

Submitted by:   
**GLEND A O. DELIDELI**  
 LDRRMO IV, PADO – DRRMD

Noted by:   
**JOSIE JEAN R. RABANOZ, CE, MPA, EnP**  
 Provincial Administrator



## H. REFERENCES

Sendai Framework for Disaster Risk Reduction 2015 -2030

Philippine Disaster Risk Reduction and Management Act of 2010 (RA 10121)

Government Procurement Reform Act (Republic Act 9184)

Provincial Planning and Development Office Susceptibility Maps funded by AUSAID, UNDP, and New Zealand Aide Program

PAG-ASA Tagum City Agromet Station as cited in the SEEP of Davao del Norte,2016

PDRRMD Office Automated Rain Gauge (ARG) Station in the Province of Davao del Norte 2017-2020

Source: Davao del Norte PDRRMD Automated Weather Station 2016 - 2020